



# International Abstract of Surgery

SUPPLEMENTARY TO

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## CONTENTS

- I. Index of Abstracts of Current Literature
- II. Authors
- III. Collective Review
- IV. Abstracts of Current Literature
- V. Bibliography of Current Literature

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# CONTENTS—JANUARY, 1923

## COLLECTIVE REVIEW

PLASTIC AND RECONSTRUCTIVE SURGERY OF THE FACE Robert H. Ivy, M.D., F.A.C.S., Philadelphia

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

- ARMSTRONG, ALGER. Crushing Operations in General (General Surgery). Experimental Research  
 LACOUTURE. The Formation of an Artificial Vagina by the Transplantation of Loop of Intestine  
 CANTY, A. U. A New Method for the Surgical Treatment of Congenital Vaginal Anes  
 GOLEY, STEPHEN, J. A New Procedure for the Formation of a Sphincter for the Bladder

##### Anastomosis

- LEVINE, F. C. and HALL, H. V. Post Traumatic Reactions. Alterations in the Blood After Fiber Anastomosis (After Blood Transfusion)

#### SURGERY OF THE HEAD AND NECK

##### Head

- WALKER, F. I. The Surgical Anatomy of the Superior Sagittal Sinus  
 DODD, W. F. An Operation for the Total Excision of Tumors in the Cerebellar Cistern. A Preliminary Report  
 RAYMOND, J. L. Occipital Encephalocele  
 AVERY, A. W. Preservation of the Motor Root of the Cervical Ganglion During the Division of the Cervical Root for Trifacial Neuralgia  
 FROST, H. J. Chronic Suppurative Proctitis with Acute Ulcerations  
 LEBLANC, I. Congenital Esophageal Malformation  
 OCHS, A. J. The Treatment of Cancer of the J

##### Neck

- TRIMM, M. B. The Final Result of Treatment in Certain Forms of Metastasis of the Neck

#### SURGERY OF THE CHEST

##### Chest Wall and Breast

- DODD, L. K. Incision in the Mamma for the Excision of Cancer of the Breast

- SOBEY, A. Contribution to Our Knowledge of Mediastinal Tumors

- HOERNICKE, E. A Tumor of the Anterior Mediastinum

- LEAVITT, P. H. Tuberculosis of the Breast with the Report of Two Cases

- BATES, F. L. The Final Result of Operations for Cancer of the Breast

##### Trachea and Lungs

- MARSHALL, H. Tracheal Reversion and Tracheoplasty with Special Consideration of Transverse Resection

- METZ, W. The Establishment of Temporary or Permanent Pneumothorax. Lip-Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess

- SCHLESINGER, S. An Endothorax Following Various Diagnostic or Therapeutic Procedures. The Cases of the Pleura and the Lung

##### Heart and Vascular System

- VOY, ALBERTUS, A. Prolonged Rupture of the Heart and Its Mechanism

- MILL, D. S. and GRAM, F. A. Intracardiac Surgery—A New Method. Preliminary Report

##### Pharynx and Esophagus

- BRICK, O. The History of Retropharyngeal Abscesses

- LORENZ, E. C. Plastic Repair of the Esophagus Particularly from the Omach

- LEIBERMAN, H. Carcinoma of the Thoracic Esophagus

- HENRI, C. A. Combined Transpleural and Transperitoneal Resection of the Thoracic Esophagus. The Caria for Carcinoma

#### SURGERY OF THE ABDOMEN

##### Abdominal Wall and Peritoneum

- CHESTNUT, T. S. Further Notes on the Treatment of the Umbilicus

## Gastro-Intestinal Tract

- JUDE, E. S. and LONS, J. H. Resection of the Body of the Stomach for Ulcer. Report of Series of Cases with End Results
- HOLZWEIN, M. The Formation of Peptic Ulcer in the Jejunum
- CASPER, A. M. Foreign Bodies in the Intestine. A Rare Diagnostic Error
- HUTTEL, T. Primary Sarcoma of the Intestine
- WARMUTH, F. C. and LAMPERT, M. Penetrating Wound of the Peritoneum with Perforation of the Intestine
- POREVOY, A. L. Prognosis of the Proximal Portion of the Colon from the Clinico-Surgical Standpoint
- DOORNBOSCH, W. Extirpation of the Transverse Colon with the Carcinomatous Stomach
- HIRSCHMAN, L. J. The Value of Temporary Colostomy
- JOHN, D. F. and MCKEYTRICK, L. S. End Results of Operations for Carcinoma of the Rectum

## Liver, Gall-Bladder, Pancreas, and Spleen

- REICHEL, R. A Contribution to the Surgery of Lesions to the Liver
- MARTENS, E. Anatomical Bases for Operations on the Liver
- MOORE, F. D. The Associated Pathology of Gall Bladder Disease. A Further Plea for Cholecystectomy
- LECHER, P. and DALLMANN, G. The Repair of the Proximal Bile Duct or Its Implantation in the Gastro-Intestinal Tract in Difficult Cases
- ZORFFEL, H. Preliminary Stages of Acute Necrosis of the Pancreas and the Advantages of Early Operation in Cholangitis
- LIVIANI, F. C. A Case of Multiple Pancreatic Calculi. Removal and Recovery

## SURGERY OF THE EXTREMITIES

## Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- BLOOMGOOD, J. C. Tumors of Bone
- PERNA, G. The Ossification of the Acetabulum and the Significance of the Septa Acetabulari Taberula in Man
- ALBERT, O. The Metatarsophalangeal Syndrome of Koebler
- ROTH, P. B. Two Cases of New Metatarsal Deformity

## Fractures and Dislocations

- SCHLÖTTER, A. An Unusual Case of Retrosternal Dislocation of the Clavicle
- SAVER, F. D. Fracture-Separation of the Lesser Humeral Epiphysis
- MARTEL, F. Traumatic Dislocation of the Hip in the Child
- ENFELD, G. I. The Surgical Treatment of Habitual Dislocation of the Hip

- KOENIG, J. Dislocation of the Head of the Femur as an Obstacle to the Complete Cure of Congenital Dislocation of the Hip

## SURGERY OF SPINAL COLUMN AND CORD

- FRANK, C. H. and SEITZ, W. G. An Analysis of Fourteen Consecutive Cases of Spinal Cord Tumor

## SURGERY OF THE NERVOUS SYSTEM

- SACHS, L. and MALONE, J. V. An Experimental Study of Methods for Bridging Nerve Defects, with Description of New Method of Autotransplants (Auto-Neurotransplants)
- LA ARRET, A. Resection of the Nerve of the Stomach, Operative Technique and Clinical Results

## MISCELLANEOUS

## Clinical Endpoints—General Physiological Conditions

- PERDUE, A. The Secondary Manifestations of Malignant Disease
- MAO, C. H. End Results in Cancer as Influenced by Type, Reaction, Location, and Age
- Surgical Diagnosis, Pathology and Therapeutics
- TEH, RAO, C. and BAKER, J. H. The Tetanus Bacillus as an Intestinal Saprophyte in Man
- Röntgenology and Radiation Therapy
- STEVENS, A. The New Röntgen Universal Exposure Table of Fiedler
- NICHOLS, B. H. The Röntgen Diagnosis of the More Important Tumors of the Long Bones
- CHEN, I. W. The Röntgenological Aspects of Achylia Gastrica
- DREHLMANN, I. and KRAUSE, A. A New Method for the Röntgenological Examination of the Aulaxy—Pneumoperitoneum
- ROTHMANN, L. The Röntgen Treatment of Frostbite
- CASE, J. T. Technical and Clinical Aspects of the New Deep Röntgenotherapy
- MARTIN, C. L. and UHLER, C. Röntgenotherapy of Intracranial Abscesses Following Spinal Air Injections
- SANDHORN, C. M. The Ultraviolet and the Röntgen Ray—Physiological Complementments in Therapeutics. A Newly Established Clinical Treatment
- PERDUE, E. P. HAYMA, J. M. J. HODGES, K. I. and RABSON, A. C. The Effect of Radiation on the Normal Tissues of the Brain and Spinal Cord of Dogs, and Its Therapeutic Application
- SCHILL, A. J. and DRAACH, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium

## GYNECOLOGY

- Uterus**
- 4 ARSOLD, C. G. Uterine Prolapse and Associated Pelvic Relaxation 43
- 4 VOLT, E. The Significance of Anomalous of the Uterine Vessels as Indicated by an Arterio-venous Anomalous of the Uterine Artery and Venous Due to an Aerial Bomb Injury 43
- 44 FOLAK, J. O. MITCHELL, E. A. and McGRATH, A. B. What Is the Relation of Hypertension to Fibroid Disease of the Uterus 43
- 44 VON OSTENBERG, H. The Indications for Total Ablation in Certain Cases of Rupture of the Uterus 4
- 4 TRYSTER, L. Irradiation and Foculation of Uterine Fibroids 4
- 4 DAVIS, L. End Results of the Surgical Treatment of Carcinoma of the Cervix Uteri 43
- 4 MERRY, J. V. A Study of Adenocarcinoma of the Fundus of the Uterus 43
- Adrenal and Peri-Uterine Conditions**
- 4 DORLAND, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy Together with Study of Decidual Reaction, Intra Uterine and Ectopic 43
- 4 DONALD, A. Adenomyoma of the Rectovaginal Space and Its Association with Ovarian Tumors Containing Tarry Material 43
- 4 SAMPSON, J. A. Isthmic Adenomyoma of the Endometrial Type Their Importance and Their Relation to Ovarian Hematomata of the Endometrial Type (Perforating Hemorrhagic Cysts of the Ovary) 43
- 4 SEAN, W. F. and ADAMS, W. R. Adenomyoma of the Rectovaginal Space Associated with Tarry Cysts Arising in Islands of Adenomyomatous Tissue in the Ovary 43
- 41 PROBSTER, A. Results of the Surgical Treatment of Long Standing Tumors of the Uterus 43
- 41 **External Genitalia**
- 4 LAGOUTTE, The Formation of an Artificial Vagina by the Transplantation of Loop of Intestine 44
- 4 CAMERA, U. A New Method for the Surgical Treatment of Congenital Vaginal Atresia 44
- 43 **Miscellaneous**
- 43 BIRD, F. D. Not on Form of Pelvic Hydatid Cyst and Its Treatment 44
- 44 YOUNG, J. V. Intermittent Asphyctic Hypertension in Gynecology 44
- 44 ALBERT, The Douglas Cry in Women 43
- 44 VATERSON, Malignant Chorionic Epithelioma with Hemorrhage into the Abdominal Cavity 43
- 44 MACDONALD, D. The Etiology of Sterility in the Female from an Analysis of 500 Case Records 43
- 43 POWELL, L. A. and MILLARD, F. W. A Case of Primary Carcinoma of the Female Urethra Treated with Radium 43

## GENITO URINARY SURGERY

- Adrenal, Kidney and Ureter**
- 44 DELMONTE, LACROIX, and MONTAGNY, A. New Method for the Roentgenological Exploration of the Kidney—Pneumoperitoneum 43
- 44 B. LANC, W. F. and BOWELL, A. J. J. Pathological Complications with Duplication of the Renal Pelvis and Ureter (Double Kidney) 47
- 44 REYNOLDS, B. Hematogenous Acute Infections Nephritis and Pyelonephritis 47
- 44 M. RICH, J. M. and SMITH, A. L. The Diagnosis and Treatment of Pyelitis 43
- 44 KUTNER, A. H. A. R. Studies in Ureteral Catheterization Preliminary Report 49
- Bladder, Urethra, and Penis**
- 44 GOTTSTEIN, J. A New Procedure for the Formation of Sphincter for the Bladder 49
- 44 SCHOLL, A. J. and BRADSHAW, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium 49
- 44 LOWER, W. E. The End Result of Operations for Cancer of the Bladder 5
- 44 FROSTEN, R. M. Gunshot Injuries of the Urethra and Their Treatment 5
- 47 **Genital Organs**
- 44 CHEN, M. W. The Operation of Ligation into the Scrotum the Testicle Retained in the Inguinal Canal 5
- 44 KUTNER, F. and VORONOFF, S. The Local and General Effects of Resection of the Deferent Canals 5
- 44 RABIN, F. W. and JUDY, F. S. Empyema of the Scrotum the Result of Diverticulitis of the Seminal with Perforation 53



## SURGERY OF THE EYE AND EAR

Eye		BUTLER, T. H. The Influence of Trauma upon the Course of Interstitial Keratitis	53
JANAKO, P. C. The Correction of Squint by Muscle Resection with Scleral Suturing	54	VARSHOFF, F. H. and LACROIX, A. V. Hyper- sensitivity to Lens Protein, Cataract Opera- tion	55
FRA LYN, W. S. and COMBES, F. C. An Unusual Orbital Tumor	54	HA THORNTON, C. O. Observations on the Signifi- cance of Retinal Hemorrhages	55
PARRY, J. M. The Localization and Extraction of Intra-Ocular Foreign Bodies	54		

## SURGERY OF THE NOSE THROAT AND MOUTH

Nose		BYLON, D. Resection of the Superior Laryngeal Nerve in Tuberculosis of the Lary	57
WOJACZYK, B. J. Polyps of the Base of the Skull	56	Mouth	
SWENSSON, L. Intracranial Cephaloceles	56	LOWERY, E. Congenital Labiopalatine Malforma- tions	5
Throat			
BROCK, O. The Etiology of Retropharyngeal Ab- cesses	5		

## BIBLIOGRAPHY

## GENERAL SURGERY

Surgical Technique		Blood	65
Operative Surgery and Technique	58	Blood and Lymph Vessels	65
Asseptic and Antiseptic Surgery	5	Surgical Diagnosis, Pathology, and Therapeutics	65
Anesthesia	58	Experimental Surgery and Surgical Anatomy	65
Surgical Instruments and Apparatus	53	Röntgenology and Radium Therapy	65
		Industrial Surgery	66
		Hospitals, Medical Education and History	66
		Legal Medicine	67
Surgery of the Head and Neck			
Head	58	GYNECOLOGY	
Neck	59	Uterus	67
Surgery of the Chest		Adrenal and Per Uterine Conditions	67
Chest Wall and Breast	59	External Genitals	67
Trachea and Lungs	60	Miscellaneous	67
Heart and Vascular System	60		
Pharynx and Esophagus	60	OBSTETRICS	
Surgery of the Abdomen		Pregnancy and Its Complications	68
Abdominal Wall and Peritoneum	60	Labor and Its Complications	68
Gastro-Intestinal Tract	60	Puerperium and Its Complications	68
Liver, Gall Bladder, Pancreas, and Spleen	6	New-Born	68
Miscellaneous	6	Miscellaneous	68
Surgery of the Extremities			
Conditions of the Bones, Joints, Muscles, Ten- dons, Etc.	61	GENITO-URINARY SURGERY	
Fractures and Dislocations	61	Adrenal, Kidney and Ureter	69
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	61	Bladder, Ureters, and Penis	69
		Genital Organs	69
		Miscellaneous	70
Surgery of the Special Organs and Cord	61		
		SURGERY OF THE EYE AND EAR	
Surgery of the Nervous System	61	Eye	70
		Ear	7
Miscellaneous			
Clinical Pathology—General Physiological Con- ditions	65	SURGERY OF THE NOSE, THROAT AND MOUTH	
Sera, Vaccines and Ferments	6	Nose	71
		Throat	7
		Mouth	7

## AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abadie, S  
 Adde, W R 43  
 Adson, A W  
 Alberts, O 27  
 Alberts, 45  
 Allen, D S 5  
 Arnaud, S  
 Arnold, C G 4  
 Bower, J H 33  
 Beck, O 5  
 Bird, F D 44  
 Bjork, D 37  
 Bloodgood, J C 3  
 Brunsch, W F 47 49  
 Bonta, F E 5  
 Butler, T H 35  
 Camera, U 44  
 Carmona, A M 20  
 Case, J T 36  
 Chesson, W 5  
 Cordes, F C, 54  
 Crane, A W 35  
 Cullen, T S, 7  
 D'Almeida, G 24  
 Dandy, W E 9  
 Davis, L 43  
 DeBorja, 36  
 Donald, A, 43  
 Dorland, W A M 45  
 Drenth, E K,  
 Edberg, E  
 Epstein, G I, 29  
 Frankha, W S 54  
 Fraser, C H, 30  
 Frostens, R M 5  
 Goljanitski, J 49  
 Graham, E A 5  
 Hawthorne, C O 55  
 Hayman, J M 39  
 Hedblom, C A 6  
 Hirschman, L J  
 Hoernicke, E 3  
 Holmstrom, M 9  
 Honner, K M 39  
 Haettl, T 20  
 Ivy, W H,  
 Jamieson, P C 54  
 Jones, D F 3  
 Judd, E S 8, 33  
 Kopitz, J 29  
 Kreutzmann, H A R 49  
 Lagoutte, 44  
 Lampert, M 20  
 Laquerrière 6  
 Lataret, A, 31  
 Leavitt, P H 3  
 Leclerc, P, 24  
 Lemmon, A N 55  
 Levine, E C 8  
 Libenthal, H 6  
 Lindsay, E C 3  
 Lothman, G 6  
 Lower, W E 50  
 Lyons, J H, 8  
 Macomber, D 45  
 Maßen, F 28  
 Malone, J Y 3  
 Marchuk, H 3  
 Martens, E 3  
 Martin, C L 38  
 Mayhew, J M 48  
 Mayo, C H 33  
 McOrath, A B, 4  
 McKintock, L S 3  
 Meng, J V 4  
 Meyer, W 4  
 Milward, F W 45  
 Minnelli, E A 4  
 Moore, F D 24  
 Morrell Kahn, 36  
 Nagelsbach, 45  
 Nichols, B H 24  
 Noordenbos, W  
 Ochsmar, A J  
 Patton, J M, 54  
 Penckmann, E P 30  
 Perna, G 26  
 Pohl, J O 4  
 Polanco, A L  
 Poweroy, L A 45  
 Pomeroy, A 3  
 Probstner, A 43  
 Probstner, H J  
 Rambo, V C 30  
 Ramlon, F W 53  
 Ranshoff, J L  
 Renckle, R 3  
 Retterer, E 5  
 Roth, P B 7  
 Rothbart, L 36  
 Runenberg, B 47  
 Sachs, E 1  
 Sampson, C M 39  
 Sampson, J A 43  
 Sauer, F D, 28  
 Schaeffer, K 4  
 Schlegel, A 8  
 Scholl, A J, J 47 49  
 Segall, H N 8  
 Shaw, W F 43  
 Smith, A L 48  
 Sonje  
 Spiller, W G 30  
 Stenmeyer, A, 24  
 Swensson, L, 56  
 Ten Broeck, C 33  
 Tinker, M B  
 Tuffier 42  
 Uhler, C 38  
 Verhooff, F H 55  
 Vogt, E 4  
 Von Albertus, A, 5  
 Von Ortenberg, H 4  
 Voranoff, S, 5  
 Walker, F I 9  
 Wenzel, F C 20  
 Wetschek, W J 56  
 Young, J V 44  
 Zorpfel, H 5



# INTERNATIONAL ABSTRACT OF SURGERY

JANUARY 1923

## COLLECTIVE REVIEW

### PLASTIC AND RECONSTRUCTION SURGERY OF THE FACE

By ROBERT H. IVY, M.D. FAC.S. PHILADELPHIA

RECENT progress in the repair of deformities of the hard and soft tissues of the face is due largely to experience gained from the treatment of mutilations of these parts acquired during the World War. The immense amount of clinical material provided opportunities for the thorough testing of already established methods and standardized the application of definite procedures to particular classes of cases. In addition, certain important modifications and improvements over old methods were worked out. Since the war the benefit of this experience is being reflected in the treatment of facial deformities occurring in civilian life. In a previous review (22) the writer covered the available literature on war injuries of the face and jaws, giving an extensive bibliography. In the present article attention will be called to some of the most important recent advances.

#### CONGENITAL DEFORMITIES

In the last few years several able contributions have been made on harelip and cleft palate. The recent outstanding papers on this subject are those by J. E. Thompson and V. Veau and his collaborators. Thompson (38) states that the principles of treatment of cleft palate are founded on accurate knowledge of the anatomy of the deformity. In other words, on a correct estimate of the degree of distortion. In regard to complete unilateral cleft palate and harelip, he concludes:

1. If embryonic union fails, the resulting deformity seen at birth can be accounted for in every detail by the muscular action of the tongue

2. There is little or no separation from one another of the posterior ends of the maxillae and any movement here is in the nature of a hinge movement by which the posterior end of the maxilla and the vertical plate of the palate bone swing on their attachments to the pterygoid processes of the sphenoid.

3. The side to which the premaxilla and the septum are attached (the larger side) is more affected by the tongue thrust than the other maxilla, the result being that its anterior end swings outward and forward, taking with it the septum and nose and carrying the alveolar border to a plane far outside and in front of its normal position and further the attachment of the septum to the palatal plate has enabled it to withstand the vertical thrust of the tongue and to retain a reasonably good horizontal position.

4. The other maxilla (the smaller side) is displaced as a whole very slightly in a lateral direction, but its horizontal palatal plate is seriously deformed, being frequently thrust upward into a vertical position against the turbinate bone.

Thompson employs the usual Langenbeck lateral incisions, and achieves approximation of the two sides of the soft palate without tension by dividing the levator palati and palatopharyngeus muscles from the nasal aspect. The paper sets forth very clearly the author's rules for undertaking repair in two, three, or four stages.

During 1921 and 1922 Victor Veau, of Paris, was responsible for a series of remarkable papers dealing with harelip and cleft palate. For unilateral harelip (43-46) he employs Jalaguier's modification of the Murel operation, a method

which has not the wide recognition it merit and produces far better results than the usual curved or angular freshening of each edge of the cleft. Veau and Lacombe (50, 41) also have valuable paper on the operative treatment of double harelip. In his work on cleft palate Veau (4, 45) begins with a critical review of eighty-nine cases operated on by the classical Langenbeck-Trethal procedure and shows that this method does not yield the uniformly good anatomical result and more particularly the good functional result to be expected of a satisfactory method. The outcome in the eighty-nine cases was as follows:

Single operation  
Complete closure 48 per cent  
Partial union 35 per cent  
Complete failure 5 per cent

General operations  
Complete closure 74 per cent  
Partial union 1 per cent  
Complete failure 6 per cent

Effect on speech  
Spontaneous improvement, 5 per cent  
Improvement by education, 5 per cent  
No improvement, 60 per cent

These rather discouraging results led Veau to investigate the surgical anatomy of cleft palate with a view to discovering if possible the causes of failure and a basis for the introduction of new operative principles. His studies (48) show that in infants with cleft palate there is no failure of development of the muscles of the soft palate and it is not until later as the result of disuse that atrophy occurs. To be useful, a soft palate must be mobile and long. The majority of soft palates that have been operated on are rigid and short. Section of the muscles of the soft palate is the chief cause of immobility. Centric contraction due to the production of a large raw surface on the nasal aspect is the chief cause of shortening. Veau (49) believes he has succeeded in part at least, in overcoming these two great hindrances to success in the classical operation. In order to approximate the edges of the soft palate cleft without tension he does not resort to section of the levator palati and palatopharyngeus muscles, but after separating the aponeurosis of the tensor palati from the posterior edge of the hard palate and dividing the tendon of this muscle through a small incision over the hamular process, he holds the two halves of the soft palate together by a horizontal suture wire passed through the muscle substance from side to side. The wire does not perforate the mucous membrane, which would not tolerate it well, but its two ends are twisted and

emerge through one of the lateral nostrils. The wire never tears in the muscle and permits complete tension at the same time per approximation of the soft palate. Avoidance of a raw surface is more difficult. Instead of incising the mucosa where it is attached to the posterior edge of the hard palate, as is usually done to lower and approximate the two mucosal flaps separated from the bone, Veau incises the mucosa of the floor of the nose and then on the oral side near the edge of the cleft around the posterior edge of the hard palate, obtaining two mucous layers (upper and lower) for closing the cleft. The nasal mucosa is elastic and can often be drawn readily across the cleft to be sutured to that of the opposite side. The nasal layer is sutured first and is very important as it avoids a raw nasal surface and accumulation of infective secretions. The oral mucosa is sutured in a separate layer. Complete closure of this layer is not always possible but this is not so important, as granulations on the oral surface do not cause so much discomfort as those on the nasal side. Veau's paper which was read before the Paris Surgical Society provoked a lively discussion by Jajuglar (23), Broca (1), Ombredanne (29) and others. Ombredanne states that rigidity of the soft palate after operation is due partly to infection from the tonsils and partly to an interstitial cicatricial contraction. He finds that spirometric exercises are very useful in preventing rigidity of the palate muscles and employs them whenever the patient is fit enough commencing about three weeks after the operation.

Ombredanne (30) corrects deformity of the nostril in harelip cases by removing a small triangular wedge of skin and cartilage from the anterior edge of the nasal opening.

Coughlin (12) reports successful closure of a very wide congenital cleft of the hard palate by means of a pedicled flap of skin from the chest, to which a piece of costal cartilage cut to fit the opening had been embedded previously.

Among other noteworthy contributors to the subject of cleft palate and harelip are Davis (3), Kellack (4), Brown (6) and Moorehead (26).

#### ACQUIRED DEFECTS

The introduction by Gillies (19) of the tubed pedicle made possible the transfer of skin flaps for a greater distance and of larger size, thus putting within the range of surgical repair deformities hitherto regarded as inoperable. Blair (5) achieves the same results by the delayed transfer method. If finally

1. That the chance of success of a flap is increased or a longer flap can be raised, or the flap can be cut narrower and thinner with equal chance of success if it is first completely raised and then immediately sutured back into its original bed and the transfer to the new position delayed for a period ranging from six days to two weeks.

2. That if a flap sloughs in its original bed, the extent of the area lost will be considerably less than if it had been immediately transplanted.

3. That if a flap will not survive, it is an advantage to have this fact demonstrated before removal of the scar and freshening of the edges of the defect.

4. That provision for a possible partial loss can usually be made in the planning of the flap.

5. That a blood clot under a flap which has been sutured back into place may be fatal to the flap. The formation of such a clot can be prevented by moderate pressure of the dressings and the use, for twenty-four hours, of multiple drains.

In many cases of very large defects Dufourmentel (15, 16, 17) Sébileau (35) and Moure (17) have made use of very long bands of skin with pedicles at each end assuring adequate vascularization and innervation. For reconstructing the entire upper lip, a complete band of skin is removed from the neck, but left attached at each end and carried up over the chin and lower lip. This is preferred to taking half of the new lip from the right and half from the left. Later the mucous surface is supplied by a second bipedicle band of mucous membrane from the lower lip. In other cases the bipedicle skin flap is taken from the scalp, the pedicles being in the temporal region. The hair of the scalp replaces the beard and mustache and hides the operative scars.

#### FREE SKIN GRAFTS

In reconstruction surgery of the face two types of free skin transplants are employed: the Thiersch-Esler or epidermic graft and the Wolfe or full thickness graft. Esler and later Waldron, Picken and Gilhes (19) adapted the Thiersch graft for replacing mucous membrane lining cavities (the mouth, nose, eyelids, etc.) with skin, the thin skin shaving being temporarily supported on a mold of dental impression compound. Ferris Smith (36) has utilized this method even for relining the antrum of Highmore after removal of the diseased mucous membrane. The Wolfe graft is particularly useful for covering the secondary defect produced by removal of a pedicle flap; for instance, to replace skin of the forehead which has been employed to reconstruct the nose. The Wolfe graft can be taken from some distant part

of the body such as the abdomen. It should include the full thickness of the skin, but all subcutaneous fat should be carefully removed. Ferris Smith (36) disputes the soundness of the almost universal practice of cutting full-thickness grafts larger than the size of the area to be covered. In his opinion such a graft should be cut exactly to pattern, sutured accurately and maintained with a light, even pressure. Keller and Parce (31) support their full thickness grafts by means of dental impression compound, as in the Esler method.

Practically all of the modern principles of surgical reconstruction of the face are exemplified in an article by Blair (5) which is very clearly illustrated by photographs and diagrams. Although this article is devoted to the repair of war injuries, it contains a wealth of material of great value to the plastic surgeon in the correction of deformities seen in civil practice.

#### ATRESIA OF THE BUCCAL ORIFICE

Atresia of the buccal orifice may be congenital or a sequel of lupus, syphilis, or epithelioma, but most frequently is the result of burns of the face. Rouget (34) observes that if it is marked it may prevent the introduction of solid food, interfere with mastication and speech, and render impossible the insertion of an artificial denture to replace lost teeth. The treatment varies with the nature and extent of the lesion. In minor cases, simple section of a band of scar tissue may suffice. Others are benefited by special stretching apparatus. In pronounced cases with the presence of a considerable amount of scar tissue, operation is indicated. The most favorable results are given by the procedure of Diefenbach or its modification by Ombredanne. In Diefenbach's operation a small quadrilateral flap is removed from each corner of the constricted mouth opening. This flap is restricted to the skin and subcutaneous tissue, not including the inner mucous membrane, and externally its upper and lower borders almost meet. The amount of cutaneous tissue removed depends on the amount of enlargement desired. After the cutting of the flap the underlying mucous membrane is divided horizontally so as to bisect the denuded area, and at the outer end of this horizontal incision an incision is made perpendicular to the first but slightly convex medially. These incisions form three small mucous flaps, an upper, a lower and an external flap. The upper and lower flaps are sutured to the corresponding skin margins and the external flap is brought out to form the commissure. When mucous membrane is not available for the com-



depends the necessity for supplying any or all of these three. Most writers now agree that skin from the forehead (Indian method) is greatly superior to that from the arm (Italian method) to supply the covering of the nose. According to Smith (36) the Italian method, which consists in fashioning a pedicle on the arm and transferring it later to the nose with the arm immobilized on the head until the new blood supply is established has nothing to recommend it for facial repair and much to condemn it. The position is torture to the patient, there is danger of emboli in the superficial veins of the arm, infection readily occurs from contact with the nose, and dressings are difficult. The supporters of the method can claim only that it prevents scarring of the forehead. This is offset by the fact that the texture of the skin is such that its contrast with that of the face and scalp is very marked. If forehead skin is not available, chest skin should be supplied by the use of Gillies' tubed pedicle. Blair (4) also states that the most dependable tissue for covering the nose and one which can be used also for lining is the skin and subcutaneous tissue of the forehead. The forehead defect can be immediately filled in with a full-thickness skin graft from the abdomen, and when this is carefully done, the repair will be only slightly noticeable. The arm skin transplanted by the Italian method and skin from the chest or the abdomen transplanted by a jump flap do not conform as well in appearance to the normal nasal skin. Small or even quite large flaps can be made from the cheeks, but with less accuracy than from the forehead and the defect is more noticeable. A columella, however, can be made quite well from the upper lip. For replacing lost mucous membrane Gillies (19) suggested covering the under-surface of the forehead flap with a Thiersch graft supported on dental impression compound. Blair (4) finds that such grafts subsequently undergo contraction so great as to demand relining of the nose. He and most other workers rely for this purpose on pedicled flaps of skin from the edges of the defect or the forehead.

There is considerable divergence of opinion as to the best material for the supporting framework of the nose. A few years ago New advocated the use of celluloid. Tietz (39) employs the middle turbinate removed from the same patient, denuded of its mucous membrane, and subjected to sterilization in normal saline at 143 degrees F for 15 minutes. The majority of surgeons employ costal cartilage or rib or a combination of both. Cohen (10) says that cartilage grafts alone never form union with bone and are therefore

never firmly fixed on the nose and are always absorbed to a greater or less degree. Bone grafts from the anterior border of the tibia have also failed in several of Cohen's cases. He finds the ideal substance in this work to be a graft composed partly of bone and partly of cartilage, taken from the seventh or eighth rib. The bony part of the graft is placed above in contact with the frontal and nasal bones, while the cartilage builds out the lower portion of the bridge. Carter (9) also uses a section of the eighth or ninth rib and costal cartilage, preserving the periosteum on the outer surface. He shows a section of union of the rib and frontal bone several years after operation. That cartilage is absorbed in the tissues is contrary to the observations of Gillies (19). Blair (4) and Smith (36). Blair says: "The general observation is that transplanted bone without normal function does not survive, and in at least two cases of rib transplant for rhinoplasty that have come under my observation two years later the bone has been completely or almost completely absorbed. On the other hand, my observation is that where perichondrium remains in contact with two-thirds of its circumference, the cartilage will persist. We have one case in which the transplanted cartilage has remained unchanged four years." In this connection Smith (36) states:

Free plants of bone with or without periosteum into the soft tissues are slowly absorbed. Cartilage has no blood vessels and lives easily by lymph absorption with or without its perichondrium. It probably grows when its perichondrium remains attached. Cartilage is readily modeled to meet any requirements. Cartilage does not unite with bone, but is held in position by fibrous adhesions. It is the ideal supporting substance." The writer of this review agrees with Gillies, Blair and Smith as to the superiority and permanency of costal cartilage as compared with other supporting substances in rhinoplasty.

#### BONE GRAFTS

Delagenière, the originator of the osteoperiosteal graft, gives a comprehensive account of the advantages, indications, and technique in a recent article (14). He states that the object of the osteoperiosteal graft is to furnish all the elements necessary for bone formation to any part of the osseous system where these elements are deficient or completely absent. Properly speaking therefore, it is not a question of a bone graft, but only a graft of the elements indispensable for the formation of a part of a bone or of an entire bone. Thus, in spite of Albee's statements to the contrary any part of the skeleton can be recon-





# IV. PLASTIC AND RECONSTRUCTION SURGERY OF THE FACE

- 25 KOPF, R. V. G. F. Operative treatment of recurrent dislocation of the lower jaw. *Arch f klin Chir* 19 cxiv, 65
- 26 MOOREHEAD, I. B. The correction of congenital cleft palate and harelip. *J Am M Ass* 9 lxxvii, 105
- 27 MOUTZ, P. Scalp flaps in reconstruction of face. *Presse med* 10 lxxv, 2
- 28 OURS, P. L. Correction of facial paralysis. *Presse med* 9 lxxv, 65
- 29 OURS, P. L. Discussion on staphylorrhaphy. *Bull et méém Soc de chir de Paris* 9 xl vi, 74
- 30 OURS, P. L. Reconstruction of nostril in harelip. *Presse med* 10 xl vi, 703
- 31 PARCE, A. D. A improved method of skin grafting in harelip. *Presse med* 9 lxxv, 65
- 32 PEARCE, U. The Restoration of Normal Relations in Old and Malformed Fractures of the Mandible. *Laryng Theme* 9
- 33 REIS, I. Treatment of non union of fractures of mandible by ingrowth bone grafts. *J Am M Ass* 9 lxxv, 307
- 34 ROBERTS, J. Atresia of the buccopharynx. Restoration maxilla. *Presse med* 9 xl vi, 77
- 35 SELLER, P. Scalp flaps in reconstruction of face. *Bull et méém Soc de chir de Paris* 9 xl vi, 74
- 36 SELLER, P. Plastic surgery. *J Am M Ass* 9 lxxv, 554
- 37 TAYLOR, I. J. Union of fractured of the mandible treated by bone graft. *J Am M Ass* 9 lxxv, 127
- 38 THOMPSON, J. E. The simplification of technique of operations for harelip and cleft palate. *Ann Surg* 9 lxxv, 304
- 39 THOMPSON, J. E. Correction of nasal deformities. *Ann Surg* 9 lxxv, 34
- 40 TRACCO, A. Reconstruction of lower lip by folded cervical flap. *Presse med* 9 xl vi, 73
- 41 V. HOOK, W. Preformed flaps aided by free fat transplantation. *Med Rec* 9 cx, 635
- 42 V. HOOK, W. The anatomical and functional result of staphylorrhaphy. *Bull et méém Soc de chir de Paris* 9 xlvi, 357
- 43 V. HOOK, W. Correction of simple hare lip. *Presse med* 9 xl vi, 5
- 44 V. HOOK, W. Operative treatment of complete double harelip. *Ann Surg* 9 lxxv, 45
- 45 V. HOOK, W. and RUPPE, C. The anatomical and functional results of rano-pharyngoplasty by classical procedures. *Ré de chir* 9 xl vi, 9
- 46 V. HOOK, W. and RUPPE, C. Correction of unilateral harelip. *Presse med* 9 xl vi, 3
- 47 V. HOOK, W. and RUPPE, C. Speech training in hare lip and cleft palate cases. *Otolaryng* 9 xl vi, 31
- 48 V. HOOK, W. and RUPPE, C. Surgical anatomy of cleft palate. *J de chir* 9 xl vi, 3
- 49 V. HOOK, W. and RUPPE, C. Technique of rano-pharyngoplasty. *J de chir* 9 xl vi, 3
- 50 V. HOOK, W. and RUPPE, C. Treatment of complete bilateral harelip. *J de chir* 9 xl vi, 3
- 51 WERT, C. E. Experiences with transplant grafts for ununited fractures of the mandible. *Proc Am Soc Med Lond* 9 9, 22, Sect Otolaryng

# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

### OPERATIVE SURGERY AND TECHNIQUE

Abedie and Angood: *Crushing Operations in Gastro-Intestinal Surgery; Experimental Research (L'incision et le clouage gastro-intestinal: recherches expérimentales)* *Bull Acad Sci Med* Par 9 1934, 6

In experiments on dogs the authors found that, far from causing necrosis, crushing methods seem to stimulate multiplication of cells so that the denuded parts are covered more quickly than when simple suture is used.

The objection that the dead tissue produced disturbs cicatrization was not supported by the investigations. Neither was it found that the procedure favored infection.

The experimental work comprised (1) suture of the sectioned stomach without crushing (2) suture of the stomach over the Mayo crusher (3) Mayo crushing of the duodenum with occluding plastics (4) experiments with the Martel crusher and (5) crushing of the intestine with ligation and a buried pursestring suture.

When crushing was done consolidation resulted at the end of five days with the exception of healing of the incision the mucosa was healed; twelve days. Chronic catgut alone was used for suturing. Ligation of the intestine over the crushed part followed by the insertion of a pursestring buried suture has no more value than the ordinary suture row which causes a less voluminous longitudinal scar toward the intestinal lumen.

In the authors' opinion the Martel technique gives more uniform and quicker results than the Mayo technique of suturing over the crusher. If the Mayo method is employed a superficial row of sutures should be placed over the crushed part before the buried row. W. A. BRYAN

### ANÆSTHESIA

Leykne, E. G. and Segall, H. N.: *Post Transfusion Reactions: Alterations in the Blood After Ether Anæsthesia and After Blood Transfusion.* *Surg Gynec & Obst* 1933 LXIV 3, 3

In spite of pretransfusion tests to determine the compatibility of the donor's and recipient's bloods, post transfusion reactions continue to occur.

The authors report three cases which show that long operation under ether anæsthesia alters the hemo agglutination properties of the patient's serum. In such cases the blood serum withdrawn immediately after the operation had a pinkish tinge and

agglutinated the donor's corpuscles. This change disappeared during the first twenty-four hours after the operation, at about the time of the patient's recovery from the effects of the ether anæsthesia. The authors attribute it to

Lipoids liberated from the tissues and taken up by the blood. When the lipoids are extracted from the blood, the serum behaves as before operation.

The organic products of surgical shock which may temporarily alter the hemo agglutination

3. The ether present in the blood. This hypothesis is supported by the pinkish tinge in the serum due to hemolysis of the red blood cells which is probably caused by the ether. Ortel suggests that ether as a lipid solvent alters the colloidal state of the blood and thus affects the hemo-agglutination and hemolysis phenomena which are also colloidal reactions. Supporting this theory is Brævre's observation that the blood Wassermann reaction is interfered with by substances which change the colloidal state of the blood.

For postoperative transfusion after prolonged anæsthesia the authors believe it is essential to match the patient's serum with the donor's red cells and vice versa after operation, even when they have been matched previously. The sample of blood serum from the patient must not be taken before the end of twenty-four hours. This necessitates postponing the transfusion twenty-four hours. During the interval the patient may be benefited with glucose or saline injections.

In the treatment of various diseases multiple transfusions from a given donor to a given recipient may cause the development in the blood of the latter of specific agglutinins and hemolysins against the donor's cells which are not present originally. Cases have been known in which post-transfusion reaction followed a second or subsequent transfusion when the blood had been matched and there had been no reaction following the first transfusion. Blood tests showed an agglutinative or hemolytic reaction.

It is important to know whether the reaction is associated with any change in the group of the recipient. Stearns, Fortune, and Ferry concluded from review of 250 transfusions that subsequent donations of blood by a given donor to a given recipient tend to increase the frequency of reaction in direct proportion to the number of the transfusions, and that repeated transfusions from several donors to a given recipient tend to increase the frequency of reaction in the recipient. McIsaac

Stearns, Fortune and Ferry found that donors differed considerably in their tendency to produce reactions.

A post-transfusion reaction suggests anaphylactic shock. The first transfusion induces the hyper-susceptibility of the recipient's serum against the donor's cells.

Robertson and Rous state that in cases of repeated transfusion it is necessary to test for auto-agglutination in the recipient's blood. They point out also that serum separated at 37 degrees C. contains more agglutinins than that separated at room temperature.

whereas agglutination is more marked at room temperature.

The authors conclude that the compatibility of the recipient and donor's bloods must be determined prior to every transfusion that a transfusion should be done within twenty-four hours of prolonged ether anesthesia even when the donor has been found suitable previous to the induction of anesthesia and that it is best to make both the indirect test to determine the group of the donor and recipient and the direct test to corroborate the compatibility of the bloods. WALTER C. BURRER, M.D.

## SURGERY OF THE HEAD AND NECK

### HEAD

Walker F. L. The Surgical Anatomy of the Superior Sagittal Sinus (Zur chirurgischen Anatomie des Sinus sagittalis superior). *New York Arch.* 9, 2, 16.

Three venous sinuses of the dura mater are of surgical importance: the sagittal, cavernous and transverse sinuses. The sagittal sinus, which is located in the falxiform process, has been studied the least. This sinus is generally triangular and receives the upper cerebral veins, the veins of the dura and the cranial bones. The conditions found are not always as they are described in textbooks on anatomy.

In rare cases the sagittal sinus is entirely absent (Portal, Veuret). More frequently it is split into two parts by a partition (Knott, Viegand, Aubert, Thiele).

The pachymenian granulations of the sagittal sinus have often been studied. The question regarding the pathologic or normal origin of these structures has been answered in many ways, but Trendelenburg was the first to advance the now generally recognized theory that these structures are normal. The author's own investigations were based on 100 specimens of the sagittal sinus obtained from male and female cadavers of different ages, beginning with early infancy. After the skull had been measured and the vault of the cranium removed, the sagittal sinus and its lacunae were studied and measured.

Regardless of the variations in the findings, two main types of the sagittal sinus were determined: (1) the simple type with straight outlines and weakly developed lacunae; and (2) the lacunar type with markedly indented lacunae. The lacunae usually vary in size between 1 and 3 cm. in some cases they may measure as much as 6 cm. According to their position they may be classified as anterior, middle and posterior. The smaller the sagittal sinus, the larger were the other sinuses.

The external architecture of the skull and the age of the subject exert an influence upon the structure of the sagittal sinus. The simple straight type is found in dolichocephalic skulls, whereas the winding, lacunar type of sinus is observed more frequently

in brachycephalic skulls. At senility there is a confluence of the small lacunae, and the older the person, the more pronounced are the pachymenian granulations.

The anatomical relations described are of clinical importance. Ijuries of the sagittal sinus are not so rare as is generally believed. In 90 Lutz described forty-one cases. The author reports a case of sinus injury in the St. Petersburg Obukhov Hospital on the service of Grevkov. The patient was a man 63 years old who was operated upon for a severe injury of the skull. The hemorrhage from the injured sagittal sinus was arrested by packing.

In general, such injuries in dolichocephalics and young persons are less dangerous than in brachycephalics and older persons. These relationships come up for consideration also in trephining operations on the skull.

SCHAECKE (Z).

Dundy W. E. An Operation for the Total Excision of Tumors in the Cerebellopontine Angles: A Preliminary Report. *Bull. Johns Hopkins Hosp.* 9, 223, 344.

The most common tumor in the cerebellopontine angle is an encapsulated endothelioma arising from the leptomeninges. This is a benign tumor. Its complete removal results in a permanent cure but the mortality of the operation is high. Therefore partial intracapsular excision is to be preferred. The salient features of the author's method are as follows:

Bilateral boccipital exposure of the cerebellum is effected with as much exposure of the involved angle as possible. The interior of the growth is removed with curette. The capsule is then picked up with the forceps and, beginning at the upper and lower poles, carefully drawn away from the medulla, pons and midbrain. This traction brings into view the several small veins and arteries crossing from the brain stem to the tumor. The vessels are ligated individually with silver clips or fine silk ligatures and divided. Gradually the whole tumor is delivered from its bed without trauma to the brain stem. The cranial nerves stretched by the neoplasm are liberated as the capsule falls away from them.

H. A. MCKINNON, M.D.



2. An acute attack is favored by inactivity of the gland
3. Susceptibility of the gland to infection is favored by stasis
4. The existing cause is an acute infection occurring in the chronic condition
5. The prophylactic treatment is maintenance of active secretion
6. The curative treatment consists in the alternate local application of heat and cold
7. Whenever the general symptoms warrant drainage should be established by free incisions

E. C. ROWLANDS, M.D.

Edberg, E. Congenital Labiopalatine Malformations. *Acta Odontol Scand* 9: 17

Lip and palate defects occurring alone or with other congenital malformations may be inherited. In Edberg's opinion it is the duty of physicians to enlighten the laity as to the manifest familial propagation of certain malformations.

In 54 labial and eighty-four palatine operations the mortality was 6 per cent. The danger of aspiration pneumonia from narcosis is emphasized and early operation on the lip without anesthesia is recommended to overcome this as well as the maintenance due to the infant's inability to nurse satisfactorily. The palate should be left alone until the child is 3 or 4 years of age. The mortality of early palatine operations is high—per cent. The author has performed eighty-four palatine closures in children ranging in age from 1 to 8 years. There were deaths from pneumonia.

In operations upon the lip flaps from the nasal septum and the lateral aspect of the jaw are utilized to close the nasal opening. As part of the post-operative treatment the lips are exposed to direct sunlight for a period each day.

In closing the palate the methods of Lane, Moscone and Langenbeck are used. All operations are done in two stages. Since 9 the author has operated upon twenty-seven cases with the Lane-Moscone method. In nineteen healing occurred by first intention in three, fistula formed in one, there was partial rupture, and in one total rupture. There was one death in this series.

The influence of palatine operations on speech is discouraging, but the afflux of air to the nasopharyngeal cavity becomes normal and the entrance of food into the nasopharynx is prevented.

Edberg's investigations have brought to light the fact that labiopalatine malformations occur considerably more often in males (57 per cent) than in females (41 per cent). In 3 per cent of the cases the condition is inherited from one of the parents and in 37 per cent it was present also in brother or sister. In 5 per cent it was combined with other disabilities or defects. The incidence of the various malformations was as follows: simple labial defect, 5 per cent; simple palatine defect, 3 per cent; combination of the two defects, 50 per cent.

A. B. MEYER, M.D.

Ochsner, A. J.: The Treatment of Cancer of the Jaw. *Ann Surg* 92: 1001, 1930.

Ochsner's experience has convinced him that early and very extensive operation with the cautery followed by carefully planned after-treatment with the X-ray or radium is quite worth while in cases of cancer of the jaw as occasionally even advanced cases will be permanently cured by this method.

MORRIS H. KARY, M.D.

## NECK

Tinker, M. B.: The End Results of Treatment in Certain Forms of Malignancy of the Neck. *Ann Surg* 92: 1001, 1935.

In response to a circular letter to all members of the American Surgical Association concerning results in the management of various forms of malignancy of the neck, the author received data from thirty-eight surgeons.

From the standpoint of treatment Tinker divides the cases into three groups: (1) those in which operation is contra-indicated such as cases of metastases to the neck from the maxilla or pharyngeal growths or growths of unknown origin (the roentgen ray or radium should be used for these); (2) those in which operation offers a reasonable prospect of cure such as cases of early malignancy originating in branchial cleft remnants, carotid gland tumors, parotid tumors, and early cases of Hodgkin's disease; and (3) those in which operation offers little but the roentgen ray and radium have caused improvement and occasionally a cure, viz. advanced cases of Hodgkin's disease, thyroid malignancy, and branchial cleft carcinoma.

Permanent results depend upon complete extirpation of all diseased tissue and all neighboring lymphatic glands, block dissection, sharp dissection as opposed to blunt dissection and the use of the actual cautery instead of the knife for the excision of certain growths. A dry field is obtained by control of the main arterial blood supply early in the operation, either by temporary closure with a Crile clamp or ligation and a latex flexible metallic band or by vessel suture. A greater portion of a large vessel can be saved and therefore more collateral circulation can be preserved by vessel suture. The author has sutured the carotid artery three times—once for carotid gland tumor and once for branchial cleft malignancy. The patients survived five years or longer. All general anesthetics increase blood pressure and the venous ooze. The majority of surgeons prefer ether. The author favors local anesthesia with or without general anesthesia.

In 83 cases of Hodgkin's disease five-year cures as obtained in seventeen. Some surgeons have abandoned surgical treatment of this condition. The roentgen ray has caused striking improvement in many cases which appeared to be hopeless.

In twelve cases of carotid gland tumors there are five five-year cures and one operative death. The

author regards as old gland tumors malignant. Radical removal of the growth with permanent closure of the arteries gives a good prospect of permanent cure. Dissection from the vessels frequently followed by recurrence.

In sixty-three cases of thyroid gland malignancy there were fifteen five-year cures and one operative death. The Mayo Clinic has had 207 cases but has not reported the final result. The length of time the disease has remained unrecognized or even unsuspected is often spanning. Operation performed before the tumor has reached beyond the capsule should give permanent cure. In ten cases with stenosis malignancy of long standing and with infiltration of the great vessels the only satisfactory thorough removal of the growth followed by radium treatment has given a cure lasting for seven years in one case and for eight years in another.

In fifteen cases of brain and cleft malignancy there were three five-year cures and two operative death. The results depend largely upon the duration and the extent of the growth. Early operation gives reasonable prospect of cure and certainty of the ar-

gically hopeless cases can be cured by the application of radium.

In 70 cases of parotid gland malignancy there were twenty-five-year cures. If the growth is within the capsule there is a chance for permanent cure and if the capsule is carefully followed during excision the facial nerve may be saved. The

author has operated upon eight cases without injury to the facial nerve and with permanent cure. After the capsule has been broken the growth extends rapidly and the prospect of permanent cure becomes less. The author draws the following conclusion:

The end result in certain cases usually considered mildly malignant is perhaps not so good as is generally supposed.

A number of reliable observers have seen permanent improvement follow the use of the roentgen rays and radium.

Certain forms of malignancy of the neck considered hopeless by some surgeons have been operated upon with apparently permanent cure by others.

WALTER C. BOWLEY, M.D.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

Dunham, E. K. Infection in the Mediastinum in Fulminating Cases of Empyema. Surg. Gynec. & Obst. 9, 227-233.

Fulminating cases of empyema are frequently associated with pericarditis or peritonitis. These conditions have often occurred so nearly simultaneous as to suggest that the streptococcus has special predilection for across membranes. Statistics based on about 4,000 cases of non-traumatic empyema tend to show, however, that this assumption is not correct, the involvement of the pericardium, the peritoneum, and the pleura being due to direct extension of the infection through the intercostal spaces.

Since extension from the peribronchial tissue spaces may also occur toward the pleura and cause empyema, it is not altogether reasonable to suppose that it can travel in the opposite direction and thus involve the hilum and the mediastinum. In the histories of 1,870 cases of empyema there was no record showing the recognition of cut mediastinal infection during life, but this condition was noted at autopsy in sixty-seven (3.6 per cent) of the 51 necropsies performed within four weeks after the empyema was recognized.

The above discusses the history and autopsy reports in detail and cites cases which support his conclusions.

Sections of the tissues clearly demonstrated the presence of the infecting organisms in the intercostal spaces. In one case with distinct interstitial involvement the cultures from the heart blood were negative, a fact indicating that the presence of the

infection in the mediastinal tissues is not due to bacteremia.

Attention directed to the fulminating character of the cases in which an infection of the mediastinal tissues is observed most frequently. The incidence of mediastinitis declines rapidly in the convalescent period. RALPH B. BUTTER, M.D.

Sorge, A Contribution to Our Knowledge of Mediastinal Tumors (Beitrag zu Kenntnis der Mediaastinaltumoren). Arch. f. Klin. Chir. 9, 22-31.

The above reports case of very large mediastinal tumor in a former 33 years of age and discusses the clinical aspect and pathologic anatomy of the condition.

A early diagnosis is rarely made. Most cases come to the clinic with the most pronounced symptoms of compression in the mediastinum. The situation in the condition is always striking, the most serious dyspnea given a yet complete euphoria following slight therapeutic measures.

In the case reported, salivarian therapy had transient good effect although the Wassermann test was negative. This fact the author attributes to the stenosis necrosis which as food of autopsy. He therefore recommends the trial of x-ray therapy in all such cases. Other treatment is purely symptomatic. The only surgical treatment usually possible when the tumor is situated in the anterior mediastinum is decompression by Sauerbruch longitudinal mediastinotomy. When the tumor is in the posterior mediastinum an Enderlen right angled flap reaching to the border of the scapula and with its base from the

third to the ninth thoracic vertebra, should be formed to obtain an extrapleural exposure.

The tumor in the author's case was probably a lymphosarcoma originating in the remains of the thymus. SIEVERS (Z)

Hörschke, E. A Teratoma of the Anterior Mediastinum (Ein Teratom des vorderen Mediastinums). *Zschr f Path* 9 xiv 37

Among teratomata of the anterior mediastinum those of cystic type are more common than the solid teratomata. All consist of fibrous substance and formations resembling skin. If those of complicated structure the tissues of all organs may appear. Sometimes there are also tissues which have undergone malignant degeneration. Such tumors are most common between the twentieth and thirtieth years of age. The clinical symptoms correspond in general to their size. The mortality is very high because of the encroachment of the growth on the respiratory and circulatory tracts. Metastases are rare even in cases of the malignant forms. Seven of the sixty-four known cases are cited and one treated by the author is reported in detail.

Hörschke's patient was a man 5 years of age. In the anterior mediastinum was found a cyst the size of a child's fist, with two cavities. Both cavities contained polyp masses, and in the larger hair and polypous proliferations from the wall are present in addition. In a thickened portion of the wall were a few more small cysts. The ground substance of the wall was connective tissue and contained smooth muscle fibers, particularly endothelial formations, and transversely striated muscle fibers. The cavities are lined with epithelium of the character of epidermis or mucous membrane epithelium. A few small cysts contained columnar epithelium. On the areas with polypous development the epithelial covering showed sebaceous glands, sweat glands and undifferentiated glands. The tissue was small pieces of cartilage, and masses of undifferentiated tissue were also found. HÖRSCHKE (Z)

Lawitt, P. H. Tuberculous of the Breast, with the Report of Two Cases. *Boston M & S J* 922 clxxvii, 30

The author gives a brief review of the literature. On the basis of postmortem examinations it is assumed that cases of tuberculous of the breast show evidence of tuberculous also in the lungs or the abdomen. The infection enters the breast through the blood or lymph streams, by direct extension, or through cracked nipple. The general appearance of the discrete and confluent types is described. A discussion of the differential diagnosis and treatment is followed by a report of the author's two cases. The article is summarized as follows:

1. Tuberculous of the breast is one of the rarest forms of tuberculous.

2. The source of the infection is variable.

3. A differential diagnosis between carcinoma and tuberculous is often difficult.

4. Operation gives excellent results. The choice of operation must be based on the type of the infection. E. C. ROBERTS, M.D.

Bunts, F. E. The End Results of Operations for Cancer of the Breast. *Ann Surg* 9 lxxvi, 34

For successful results the treatment of cancer of the breast like that of any other pathologic condition must be strictly individualized.

The results depend more upon the stage and dissemination of the growth when it is presented for treatment than upon the particular type of operation performed.

More data regarding the pre-operative and post-operative use of the X-ray and radium are required before final conclusions can be drawn, but there seems to be little doubt of the value of radium applied directly in the axilla.

The substitution of the X-ray or radium for surgical treatment cannot be safely considered at the present time.

The early removal of the growth remains the one and only sure method of treatment.

H. W. McKNIGHT

## TRACHEA AND LUNGS

Marshall, H. Tracheal Resection and Tracheoplasty with Special Consideration of Transverse Resection (Ueber Trachealresektion und Tracheoplastik mit besonderer Berücksichtigung der Querresection). *Monatsschr f Ohren* 9 1 776

Although dilatation is the method of choice in the treatment of cicatricial stenoses, operation may be rendered necessary by such conditions as ulcers due to pressure difficulty in the introduction of bougies, etc. In cases of stenosis due to softening the delicate hyaline cartilage of the tracheal passages is easily destroyed by pressure from without (trauma) or by perichondritis. A condition designated as tracheomalacia then develops which robs the trachea of its firmness. When this occurs the tension and the inspiratory suction of the tracheal wall cannot be relieved after the removal of the pressure and the only treatment possible is tracheal resection. Partial resection with covering of the resulting defect by plastic operation is best. The prognosis of total or transverse resection is less favorable. As the lung and inf. et al. of the thoracic viscera, are hung on the trachea as it were, great debasement develops following the transverse resection, and this can be prevented by suture only with difficulty. The author's method of suturing is as follows:

A circular and if possible, submucous suture is inserted. This may be done posteriorly by turning the tracheal stumps it may be possible also to suture the posterior circumference with catgut from within the knots being placed in the lumen





aspirate the air with the stagnating blood, determines whether air embolism will become evident.

The clinical pictures in cases of air embolism show a wide variety. Further study of these complications should be made by means of examinations of the eye, feces, and urine.

The best treatment is preventive. When an air embolus occurs the operation should be stopped immediately, the patient's head lowered, and the heart action stimulated. Intravenous injections of adrenalin will increase the amount of blood passing through the brain by decreasing the blood supply in the splanchnic areas. H. A. McKim, M.D.

## HEART AND VASCULAR SYSTEM

Von Albertini, A. Pulling-Rupture of the Heart and Its Mechanism (*Die Zerrungsruptur des Herzens und ihr Mechanismus*). Frankfurt: Fischer's Verlag, 1914, 385.

A girl threw herself from the third story of a house and died three days later. Death was attributed to fracture of the pelvis with injury to the intestine. Autopsy showed a transverse tear of the endocardium at the base of the right anterior pulmonary artery and hemorrhages in the epicardium and endocardium at the base of the right auricle. Microscopic examination showed an oblique tear in the lower segment of the pulmonary tube extending to the cardiac muscle fibers.

There are three varieties of rupture of the heart: those due to bursting, those due to crushing, and those due to pulling. The bursting ruptures are caused by an increase in the internal pressure, traumatic or spontaneous. The tear occurs at the site of the greatest tension of the wall, the highest pressure, and the greatest elasticity. Crushing ruptures are caused by the action of secondary external force against the region of the heart. The case reported by the author was pulling rupture due to the heart continuing to fall when the body struck the ground. The rupture site is characteristic for ruptures of this type. The heart is forced out of its normal position and the tear takes place at the point where the pull is greatest. Kloss (Z).

Allen, D. S. and Graham, E. A. Intracardiac Surgery—A New Method. Preliminary Report. *J. Am. M. Ass.* 1914, 1914, 28.

The new surgical procedure for intracardiac operations which the authors have worked out is performed in the following manner:

A cardioscope is introduced into the cavities of the heart through the heart wall and tied into the wall by pursestring suture or ligature thrown around the point of introduction. This also controls the hemorrhage. It is then manipulated to bring into view the desired portion of the interior of the tricuspid or the mitral valve. The blood does not obscure the view. The endocardium can be seen through the cardioscope as clearly as the mucosa of the bladder is seen through the cystoscope.

The cardioscope is a metal tube with one end closed by a planoconvex lens. The convex surface of the lens is outside and can be applied snugly to the walls of the heart cavity.

A knife to cut the alveoli is carried alongside the tube of the cardioscope. The flat steel handle is held close to the tube by two collars. The blade of the knife is placed at right angles to the handle. The cutting edge faces the lens. The entire blade can be concealed in a groove cut across the center of the lens.

Because of hemorrhage the ventricular route of entry to the mitral valves was chosen at first, an opening just sufficient to admit the cardioscope being made through the wall of the left ventricle near the pericardium and pursestring placed about the instrument. Because of high pressure and cardiac disturbances, however, this method was abandoned and the left auricular appendage chosen as the route of approach.

The end of the cardioscope is pushed from the cavity of the left auricle into the cavity of the left atrium, the instrument being held so that the valve leaflets are in contact with the lens during systole. The knife blade is pushed into the cavity of the ventricle. By traction on the handle of the knife the leaflet is then brought against the lens, and by further traction the valve is cut.

The end of the cardioscope is then withdrawn from the cavity of the atrium into the cavity of the appendage. While it is being held there that portion of the auricular appendage which contains the end of the cardioscope is tied off and amputated.

Twenty-four experiments have been done through this approach. There was only one fatality and this was due to a very easily avoidable fault of technique.

The disadvantages of the procedure are that hemorrhage is prevented, the circulation is not interrupted, haste is not imperative, and the operation can be carried out under the guidance of the eye.

H. A. McKim, M.D.

## PHARYNX AND OESOPHAGUS

Beck, O. The Etiology of Retropharyngeal Abscesses (*Zur Ätiologie der Retropharyngealabszesse*). *Monatsschrift für Ohrenheilkunde* 1914, 9, 1, 966.

The rupture of pus through the tip of the inflamed mastoid process into the soft parts of the neck causing condition known as Bezold's mastoiditis is not uncommon. Cases in which the pus penetrates to other sites are less frequent.

The author describes two cases of the latter type. In one, the rupture occurred in the floor of the tympanic cavity and in the other in the median wall of the mastoid process. In both, the gravitation of the pus led not only to an abscess visible externally but also to a retropharyngeal abscess. Beck states that retropharyngeal abscesses originating in the ear always lie in front of the deep fascia of the neck.

PARKES (Z).



A preliminary rib resection was performed to facilitate exposure and to collapse the lateral chest wall so that an esophageal stoma could be made. At the time of the radical operation the growth was localized in the cardia but extended through the hiatus. There were no markedly enlarged glands. The incision was extended upward and the pleural cavity opened widely. The diaphragm was then split radially at the hiatus and the cardiac end of the stomach and the esophagus were mobilized up to the root of the left lung. The right azygos trunk was separated, the left one cut. During these steps of the operation there was no appreciable change in the pulse or respiration. About 4 cm. of the lower esophagus and most of the stomach at the lesser curvature and its upper third at the greater curvature were resected. The cut end of the esophagus was sutured to the depressed skin edges laterally and the sutured stump of the stomach sutured to the skin margins in the midline. The diaphragm was sutured with chromic catgut and both pleural and peritoneal cavities were closed without drainage.

Immediately after the completion of the operation the patient was fully conscious and rational. Most

of the operation was performed under local anesthesia. The pulse was 90 and of fair quality. The blood pressure did not fall below 110 systolic and 70 diastolic. The convalescence was relatively uneventful.

On the fifth day feeding was begun through the gastric stoma, and on the fourteenth day a rubber tube connection between the stomas was made through which the patient swallowed liquids. On the twentieth day he swallowed liquids containing 1,800 calories. Later he was able to swallow cereals, milk toast, and similar foods. He gained weight and his hemoglobin rose from 35 to 65 per cent.

The pathologic specimen showed an annular carcinoma of the stomach which had infiltrated beneath the mucosa, producing mass measuring in the fixed specimen 9 by 7 by cm. In areas the growth extended through the serosa. It involved the lower esophagus. A number of lymph nodes showed metastases. There was a margin of normal tissue above and below the growth.

This is the second reported case of successful combined resection of the cardia and the thoracic esophagus. The first was reported by Zaaier in 1913.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

Collen, T. B. Further Notes on Diseases of the Umbilicus. *Surg. Gynec. & Obst.* 9: 1919, 57.

The author reports his observations on diseases of the umbilicus which he has made during the six years since the publication of his book on this subject.

He quotes Logan's and Miles' descriptions of the frequency of tetanus in the newborn among the Chinese. Such is due to the lack of asepsis during labor and especially of care of the cord and umbilicus.

Granulation tissue at the umbilicus in the newborn appears as a small, red, pus-discharging mass in the umbilical depression. Histologically the surface is made up of epithelium and covered with polymorphonuclear leucocytes. The outer layers are granulation tissue but the center may be more or less organized. In the treatment the base may be ligated with catgut and the top clipped away. Granulation tissue usually dries up under treatment with antiseptics.

Umbilical polyps originating in the omphaloenteric duct resemble cherry secret retained clear fluid, and are covered with intestinal mucosa. The author reported a case of umbilical polyp associated with Meckel's diverticulum. The polyp was excised and the stump of the diverticulum invaginated into the gut under purse-string suture. This invaginated stump became congested and partially obstructed the gut lumen.

Goetsch in 1909 reported a case with gastric mucosa in the tip of a Meckel's diverticulum.

Cases of an accessory pancreas in the tip of Meckel's diverticulum have also been reported.

The author describes a case of Meckel's diverticulum containing an ordinary pen with its head buried in the wall of the diverticulum near the tip, the point of the pen lying free in the lumen. He mentions also two cases of malignant myomata associated with Meckel's diverticulum.

Umbilical infection is frequently caused by an accumulation of foreign material in the umbilical depression. The treatment consists in dilating the umbilicus, curetting away the concretion, removing any granulation tissue, and treating the umbilical area in the same manner as superficial infection.

The author describes a case of tuberculous peritonitis with tuberculous masses opening at the umbilicus.

Fiaschi has described a chancre of the umbilicus in which spirochetes were obtained. Ryuma has reported a case of condyloma of the umbilicus which disappeared after antisyphilitic treatment.

In 1909 the author reported bluish discoloration at the umbilicus as a diagnostic sign of ruptured extrauterine pregnancy. This would be expected only when there is free blood in the abdomen and probably is more apt to be encountered in thin persons. Occasionally the bleeding may be slow and persistent instead of sudden and severe. A large quantity of blood may accumulate in the abdomen without causing signs of shock. In such a case the umbilicus umbilates the blood and appears bluish.

Collen has collected nine cases of atheromatous cysts of the umbilicus. These cysts, which may reach 3 or more centimeters in diameter, are usually

pedunculated covered with skin stretched and thin as a lid. They have smooth inner surfaces, are filled with grumous or crumbly material, and are lined with squamous epithelium devoid of hairs and sebaceous or sweat glands. The cyst contents consist of exfoliated squamous epithelium fat droplets, and cholesterol crystals. The cysts are easily removed. In the author's opinion small pieces of attenuated skin of the umbilical sac may become injured and in time produce a theromaceous cyst.

Adecomyomatosis of the umbilicus occurs only in women. These growths are small, but occasionally

It at the menstrual period and sometimes associated with slight escape of blood. The period histologically they consist of unstriated muscle and fibrous tissue with tenacious mucosa scattered throughout the nodules.

The author has found one instance of a small nerve or neuromatoma of the umbilicus and on one or two occasions has noted small pigmented moles.

Mention is made also of Carcinoma of papillary form of the umbilicus arising from squamous epithelium. The papillary masses are covered by many layers of squamous epithelium in the superficial layers of which are hornified. Scattered between the epithelial cells are small round cells or polymorphous leukocytes and many eosinophils. Beneath the epithelium are young connective tissue cells small round cells, and polymorphonuclear leukocytes. The central stroma of the papillary mass was constituted of fibrous tissue.

A case of large pseudomucousoma of the umbilicus several small pseudomucousomas of the umbilicus is reported.

Carcinoma of the umbilicus is classified (1) primary umbilical carcinoma of the squamous cell type or adenocarcinoma (2) secondary umbilical carcinoma from the stomach gall bladder intestine ovaries uterus, and abdominal organs. Primary squamous cell carcinoma of the umbilicus is rare. The author has collected only four cases. Carcinoma of the umbilicus is usually secondary to primary cancer of the stomach. Umbilical carcinoma secondary to carcinoma of the intestines and rectum is rare.

Sarcoma of the umbilicus is rare. The author describes one of perithelial mesenchymoma.

An amniotic umbilicus is characterized by absence of surrounding skin the defect being repaired by amnion which is reflected upon the folds from the cord. The surrounding skin is usually thin intact.

Umbilical hernia at birth is probably due to one of three causes or some combination of them: (1) stretching of an amniotic umbilicus (2) the escape of abdominal contents through patent umbilicus (3) failure of the intestines to recede into the abdomen. Prompt operative interference is the only treatment. Delay of a few hours may be fatal. Even after short time the outer covering may become dry and the intestines may be cyanotic.

In dissecting testicular loops densely adherent to the walls of an umbilical hernia patches of the sac wall may be left on the intestines. These patches should be trimmed off like the repair patches on the inner tube of a bicycle tire. Their surfaces are relatively smooth and do not bleed.

The author describes two cases of persistence of the strachus. WALTER C. STREET, M.D.

## GASTRO-INTESTINAL TRACT

Judd, E. S., and Lyons, J. H. Resection of the Body of the Stomach for Ulcers. Report of a Series of Cases with End Results. *Ann. Surg.* 9, April, 1909.

The impossibility of distinguishing between benign ulcer and carcinoma of the stomach almost microscopic examination makes some form of removal of the ulcer necessary. If the ulcer is large or high on the body of the stomach if there are multiple ulcers or if there is hour glass constriction resection is constantly is often the most simple operative procedure. This operation, also called transverse sleeve or middle gastric resection is particularly adapted to ulcer with hour glass deformity as it removes the lesion and, at the same time, relieves the obstruction.

Attention has been called to the fact that stomach in which sleeve resection has been performed empties better than one in which V shaped resection has been done. For functional reasons Alzner recommends the removal of sleeve which is longer on the greater curvature than on the lesser.

Observations made at the Mayo Clinic on 61 patients who had test meals before and after operation indicate that after sleeve resection the reduction in acidity is considerable. De Quervain and Eschbacher and Redwitz report similar decrease. Sufficiently numerous observations have not yet been made to determine whether the removal of acid secreting mucous membrane is fully or only partially responsible for this decrease.

Opinion seems to be divided as to the advisability of saving sleeve resection. Chief among the adverse reasons offered is the probability of hour glass constriction as sequel. Judd and Lyons believe that this possibility has been over-emphasized. Several authors consider sleeve resection the operation of choice and it is reported high percentage (70-90) of complete or very nearly complete cure.

RESECTION	STAGE	RESECTION	PERIOD	FOOTNOTES

From 1901 to 1908 sleeve resections were performed in the Mayo Clinic one for antrum one for lymphogranuloma thirty for carcinoma, and fifty six for benign gastric ulcer. The operations for ulcer were performed on thirty seven women and nineteen men.

Five of the thirty two patients with carcinoma it was necessary to resect the colon at the time of the

sleeve resection in one gastro-enterostomy as necessary and in one pyloroplasty. In this group there are four operative deaths. Thirty seven per cent of the patients who survived the operation and

who have been traced are alive and well at least ten and one half years later. Ten patients died of recurrence after leaving the Clinic. None of the patients in whom glandular involvement was found at operation is alive.

As a group the fifty six cases in which resections in continuity were performed because of benign ulcer represent serious surgical problems. In this group there were three operative deaths, and one patient died after leaving the Clinic. Four of the fifty six patients were operated on less than one year ago. Of the remaining forty eight, 85 per cent have reported their condition, and of these 70 per cent are cured. The average length of time between the operation and the last report is four years. Six patients reported that they were improved but not cured, and six considered the results unsatisfactory.

In fifteen cases a roentgen ray examination was made at periods varying from one month to six years after the operation. The stomach was then found to be practically normal in shape, size, and position.

In considering mortality rates, the possibility of gastric cancer in patients believed to have gastric ulcer should be borne in mind.

#### INDICATIONS FOR SLEEVE RESECTION

Sleeve resection is not suitable for all cases, but the authors believe it can be employed to advantage more often than formerly. The simple V excision of gastric ulcer may result in almost complete retention. The lesion is more apt to be removed thoroughly by sleeve resection than by excision. Moreover in cases of gastric ulcer the lesion in the stomach although apparently benign may be malignant and must be removed or destroyed, and in this case the sleeve resection seems to be the more logical procedure. When the ulcer is large, indurated, and in the central or cardiac third of the stomach a sleeve resection can be performed with less technical difficulty than excision and gastro-enterostomy. There is less actual operating than in any other procedure and usually the technical steps can be carried out more curatively. In none of the Mayo Clinic cases

as there was necrosis of the gastric wall or gangrene of the suture line and even when the anastomosis was complicated, there was no interference with healing.

The principal objections to sleeve resection are that it removes too much of the unaffected gastric wall, and that it is often followed by contraction which results in hour glass deformity. If the tumor is malignant there can be no objection to wide excision of the lesion but if it is benign, as much good tissue should be preserved as is compatible with good results. For this reason it is best not to employ the procedure for small ulcers. If the ulcer

is large the deformity will often be less following sleeve resection than the following excision and gastro-enterostomy.

#### TECHNIQUE

The first technical step in the operation consists of separating the lesion from the surrounding structures. After the stomach has been freed, the gastro-hepatic omentum is dissected away from the lesser curvature for a sufficient space and the gastroduodenal omentum separated from the greater curvature. The area to be removed is clamped between two large Pylor clamps. Rubber guarded clamps are used to prevent soiling from the gastric contents as the segment is cut away with the cautery. These clamps are placed on each segment of stomach just beyond the large crushing clamps. The latter are then removed and the two segments joined. Two rows of catgut sutures are used to approximate the mucous membrane, the muscularis, and the peritoneal layers, and the anastomosis is completed by one row of interrupted silk sutures. The angles at the lesser and greater curvatures are supported by suturing the several parts of the severed omentum over them.

#### CONCLUSIONS

The authors' conclusions are as follows:

In cases of carcinoma of the stomach the results of sleeve resection are as satisfactory as those of any other form of operation.

Sleeve resection is well suited for certain ulcers high on the body of the stomach for large perforated ulcers, and for multiple ulcers. It is the ideal procedure in hour glass stomachs.

The danger of hour glass constriction following sleeve resection has been exaggerated.

The functional results of this operation are very satisfactory.

Holzwiesing, M. The Formation of Peptic Ulcer in the Jjun m (Ueber peptische Geschwulstbildung im Jjunum). *Zentralbl. f. Chir.* 1913, 864.

For the development of a peptic ulcer the presence of digestive acid gastric juice is essential. If the latter cannot be demonstrated it is not possible to speak of a peptic ulcer. For this reason the author doubts whether all of the fourteen cases of lesions in the vicinity of the ileocecal valve which were recently collected by Fischer were true cases of peptic ulcer.

In a case reported in this article by Holzwiesing a group of peptic ulcers were found just beneath the placodes of the jejunum, the perforation of one of them had caused a fatal peritonitis. Acid was found in the abdominal cavity. The gastric juice had not been neutralized below the papilla of Vater because the latter was occluded by a stone. The local pre-disposition of the affected jejunal loop was due to the presence of two mesenteric lymphonata obstructing the circulation. Roux (2)

Carmes, A. Foreign Bodies in the Intestine: A Rare Diagnostic Error (F. casuistique du corps étranger dans l'intestin diagnostiqué par erreur). *Synthese* 10, 133.

A boy 17 years old allowed pain. One year later he experienced attack of severe pain in the right hypogastrium with nausea, vomiting, distention of feces. A diagnosis of appendicitis made and ice applied to the abdomen. The condition did not improve. The patient referred to the author.

At operation a small liver enlarged by adhesions was found in the ileocecal region. The appendix, which was retrocecal, was not inflamed. A pin pointed through the posterior wall of the ileum from the ileocecal valve. Only its head remained in the lumen of the gut. The pin was removed and an appendectomy was done. The patient was discharged at the end of four weeks.

WOLFFENBUTEL (3)

Huettl, T.: Primary Sarcoma of the Intestine (Primäres Intestsarcoma). *Omnidip* 3, 24, 47.

The author reviews the pathologic nature and the clinical aspect of primary sarcoma of the intestine in connection with the case histories of 18 sarcomata of the small intestine and 6 of the colon and 4 of the rectum. In one occurs in the lower part of the intestine with great frequency. The risk of carcinoma is not much less. Huettl does not consider lymphosarcoma true as carcinoma but lists lymphadenoid sarcoma (Angler) in this group but different to leiomyosarcoma and the malignant lymphoblastoma (Richter). The true sarcoma he includes in the other groups: the sarcomatous or small melanosisarcoma, giant cell sarcoma, and alveolar sarcoma originating in the muscular or connective tissue of the intestine.

In the small intestine and ileocecal region the most common sarcoma is the round cell sarcoma; in the colon it is the lymphadenoid sarcoma, while in the rectum it is the melanosisarcoma. The four rectal sarcomata in the author's cases belonged to the group of non-melanoid sarcomata. It is very difficult to draw a sharp line between round cell sarcoma and lymphadenoid sarcoma. A striking fact in Huettl's cases is that all of the lymphadenoid sarcomata metastasized along the lymph channels. The melanosisarcomata include both very malignant tumors and benign tumors. It may be assumed that the pigment found in the cells is not of aneurism origin.

None of the patient's cases are reported after the third and fifth decades of life and the rest in order of years of age. There were 10 males and 8 females.

Sarcomat of the duodenum appears in the form of diffuse infiltration, which forms compact, nodular tumors. Sarcomat of the small intestine usually causes distention of the infiltrated part of the

gut. In Huettl's opinion the distention results from destruction of the muscle element. Lymphadenoid sarcomata, which spring from the submucosa layer and involve the muscularis of the intestine also cause distention. Lymphoma originating from the invasion of the mesentery and growing toward the lumen of the gut causes constriction.

The clinical picture is very diverse. A preoperative diagnosis is difficult; there is nothing characteristic in the history. The frequent avoidance of the condition in tuberculois can be explained by the assumption that the lymphoid cells of the follicles of the intestinal wall form the point of origin of the lymphadenoid sarcoma. Leukemia may arise from any chronic inflammatory collection of lymphocytes.

The course of the disease may be divided into two periods. During the first stage the complaint is indolent but in the second stage the tumor is palpable. The mobility of the tumor, the blood picture, and the fever are not of much value in the diagnosis. Roentgenography is important. The most frequent complication is intestinal intussusception. The prognosis is unfavorable.

A poor result may be expected only in cases of rectal sarcoma. Of the four patients there are still only one half; one died half a year after the operation. Of the cases of sarcoma of the small and large intestine only one was cured and in this instance the tumor, as an ileocecal giant cell sarcoma, the others the condition was found to be operable. The operation or occurred a short time later.

The lymphoid and the infiltrative sarcomata are particularly malignant; the process is only hastened by operation. The picture is similar to that usually seen after extirpation of the spleen for leukemia. Following treatment improvement the condition rapidly becomes one for which Huettl recommends roentgenotherapy combined with administration of arsenic. von Los, Tux (2).

Wassinski, F. G., and Lampert, M.: A Penetrating Wound of the Perineum with Penetration of the Intestine. *J. Am. Med. Ass.* 9, 1333, 304.

A boy aged 6 years, slid down the side of his back onto a broken pine fork handle. The handle penetrated the right perineum about 10 cm from the rectum for a distance of 6 to 7 in. The boy pulled out the handle, lay down for an hour and then walked to the farm house. He refused the severe abdominal pain he was given morphine and codeine.

Upon his arrival in the hospital 12 hours later he was in a state of shock. His color was good. The abdomen was hard and contracted, the rectum being spastic. Complaint was made of cramps and pain in the lower abdomen.

On general percutaneous dullness was noted. A catheterized sigmoidoscope of normal. The

ragged, penetrating, stellate perineal wound did not bleed. Proctoscopic examination showed no injury to the rectum. Immediate exploratory operation was advised.

With the patient under ether anesthesia the abdomen was opened in the midline. Fluid and intestinal contents escaped. Food and fecal material were found widely disseminated. A lacerated wound of the ileum, about 6 in above the cecum, through which intestinal contents were escaping, was closed with two layers of inverting sutures. The intestines were found covered with exudate and were deeply infected. The penetration of the peritoneal cavity was discovered to the right of the pelvic peritoneum. It did not involve the ureter or prostate gland.

After the abdomen had been freely flushed with salt solution, the abdominal wound was closed around two tube drains reaching to the pelvis. Another tube was then inserted through the perineal wound until it came into contact with the abdominal tubes, thus making through and through drainage. The perineal tube was fixed in position with a silk worm gut suture. The operation lasted thirty-five minutes.

The patient was in an obstinate proctodynia, kept in Fowler's position, and given 500 units of nitrofurin serum. The respirations are kept between ten and twelve by frequent doses of morphine. There is no postoperative nausea or vomiting. Water was given freely by mouth. Frequently changed, moist hot packs were applied to the upper abdomen and both sides. After twenty-four hours the pulse was 116 and the temperature 103.4 degrees F. Both gradually returned to normal. On the fourth day the patient had a normal bowel movement.

For the first thirty-six hours there was considerable serous cloudy drainage from the perineal and abdominal tubes. This gradually subsided and the tubes were removed on the fifth and sixth days. The patient made an uneventful recovery and was discharged in good condition on the sixteenth day.

In the authors' opinion pain is one of the first and most important signs of injury of the abdominal contents, and when there is doubt as to the presence of an intra-abdominal injury exploratory operation is advisable. Early operation will reduce the mortality. Through and through drainage is effective. It is more readily possible in the female. Intestinal content soiling the sacra is best removed by free saline flushing and vacuum aspiration.

The authors give sufficient morphine for three or four days to reduce the respirations to 10 each. Water should be given freely by mouth and proctodynia supplemented by intra-urethral and subcutaneous injections of saline solution. Nausea and vomiting should be treated by frequent gastric lavage. Early blood transfusion is of value.

WALTER C. BRYER, M.D.

Potassoff, A. Ptoosis of the Proximal Portion of the Colon from the Clinico-Surgical Standpoint (*Ptoosis des proximalen Dickdarmabschnittes im klinisch-chirurgischen Hinsicht*). *Verh. Chir. Arch.* 91: 4, 57.

A predisposition of the proximal portion of the colon to congenital variations is due to the late conclusion of its embryonic development. The more common secondary changes of form and position are caused by inflammatory processes. No definite conclusions have been reached regarding the nature of Jackson's membranes and the pathological and anatomical relationships. Such changes, or those originating in another manner, lead to a vicious circle, as inflammatory processes may be both the cause as well as the result of mechanical disturbances.

Ptoosis of the colon occurs more frequently in females than in males. The latter include particularly those who are obliged to stand, good deal are emaciated, and subsist on bulky food. In the first stage of the condition there is stasis of the intestinal contents, particularly in the cecum; the symptoms consisting of constipation, periodical flatulence and slight pain in the right iliac region. Only in the second stage, when stasis and dilatation of the cecum are superimposed on the stasis, does the subject feel really sick. The constipation and pain then become more intense, force the patient to remain in bed for two or three days and are sometimes associated with nausea and vomiting.

In the third stage the right half of the transverse colon sinks, the hepatic flexure becomes agglutinated, and the transverse colon may course partly parallel to the ascending colon. A later the left half also sinks and must then rise abruptly to the splenic flexure which remains fixed, and as the omentum which is drawn with right exert pressure (taxis) becomes complete in the entire colon up to the descending portion. Slight symptoms of ileus may develop or those suggesting ulcer of the stomach or duodenum.

In the differential diagnosis the important features are the complete and only temporary disappearance of the pain after certain postures, massage, etc., and the presence of characteristic points of pain. Because of the inflammatory changes the condition may suggest appendicitis but is not identical with it.

The surgical treatment should not be confined to an appendectomy. A toilet of the entire right half of the abdominal cavity should be undertaken; therefore sufficient long incisions must be made. Inflamed portions of the omentum must be resected as such an omentum may maintain colitis even in the absence of adhesion and bands. Adhesions, bands and membranes which inhibit peristalsis, fix coils of intestine to one another or cause kinking of the transverse or ascending colon must also be removed. The hepatic flexure should always be sought out carefully. Usually it will be found bound by bands and adhesions. Occasionally the taeniae are transformed in certain areas to firm but





healing is complete and the wound has been proved sterile by bacteriological examination the peritoneal cavity is opened under local anesthesia, the bowel replaced, and the wound closed in layers.

CARL R. STEDER, M.D.

Jones, D. F. and McKittrick, L. S. End Results of Operations for Carcinoma of the Rectum. *J. Surg. Gynec. & Obst.* 1914, 386

Some surgeons believe that carcinoma of the rectum almost always, or nearly always, remains localized to the bowel and that therefore an extensive operation is not necessary. A second group believes that the posterior operation gives as good late results and has much lower immediate mortality than the abdomino-perineal operation. The mortality of the posterior operation as recently given by Lockhart-Mummery was 5 per cent. Hile Crile reported twenty cases without death. According to third group, as much intestine can be excised from below as from above. The others state that while this may be true it is usually impossible to remove more than a small part of the perirectal fat and mesentery from below and that if it is not necessary to excise perirectal fat and mesentery the posterior operation is adequate.

Up to 95 probably not over 5 per cent of the cases seen were operated upon and after this careful selection the mortality of operation by the posterior route was 6 per cent, and of those living the operation only 6 per cent lived three years. Therefore only about 4 per cent of the patient seen lived for three years. This is contrary to the statistics of H. Usmann indicating that of patients dying of carcinoma of the intestines only 50 per cent show any growth outside of the bowel. All of this is true about 50 per cent of persons operated on by the posterior route should survive instead of only 4 per cent. I Crump series of cases which is the best for the posterior route it is found that 9 per cent of the total number of patients seen were alive three years later.

Considering the most extensive operation, the combined abdomino-perineal operation of Miles, in which there is no possibility of implantation of cells from the growth, it is found that 7 per cent of the total number of patients seen are alive at the end of three years and 3 per cent are alive at the end of five years. This is great improvement over the posterior operation but far from the 50 per cent of permanent cures which H. Usmann's statistics would lead one to regard as the goal of the surgeon.

The value of the various operations should be determined definitely by figures rather than by the impressions of surgeons. The operation of choice is the procedure which gives the largest number of living patients at the end of three or five years out of the total number seen. Any operation, regardless of low immediate mortality is of very little value if it can be applied to only 5 per cent of the cases seen. The fact remains that we are able to operate upon not more than 65 per cent of the patients seen

and only 12.3 per cent of the total number are alive five years later even when an extensive operation was performed. Not over 2 per cent of all are alive ten years later.

In the author's series the mortality for the abdomino-perineal operation was 8 per cent. In the last eleven cases there were no deaths. Fifteen of the patients operated upon died in three years or less. A 40 per cent of these had metastases in the liver, regional glands, and perirectal tissues.

H. W. F. A., M.D.

## LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Reichle, R. A Contribution to the Surgery of Injuries to the Liver (Beitrag zur Chirurgie der Leberverletzungen). *Beitr. Klin. Chir.* 9, 1913, 60

Reichle reports ten cases of injury to the liver treated at the Allerheiligen Hospital at Breslau. Eighteen were subcutaneous ruptures and two gunshot injuries. The total mortality was 55 per cent that of the complicated ruptures 100 per cent and that of the uncomplicated ruptures 37.5 per cent. Of the ten cases of gunshot injury one complicated by laceration of the kidney as well as the liver.

The symptoms of injury to the liver are uncertain hence it is difficult to decide the indications for operation. Reichle divides early operation when ever such injury is suspected, basing his advice on the disproportion between the apparently slight symptoms of injury during the first few hours and the severity of the operative findings a short time later.

In seven cases the cause of death was primary hemorrhage (five times from rupture of the liver once each from injury to the vena cava and rupture of the spleen).

Present day treatment consists in suture or tamponade. A serious complication is the sequestration of portions of the liver which have been deprived of proper nutrition. When hemorrhage has been very severe intravenous reinfusion of fluid blood from the abdominal cavity has been found of great value. Its first most cases was taking 7 every 100 ccm of blood 1 ccm of 1 per cent sodium citrate should be added.

NABORSKY (2).

Martens, E. Anatomical Bases for Resections of the Liver (Anatomische Grundlagen für Resektionen an der Leber). *Beitr. Klin. Chir.* 9, 1913, 620

The distribution of the vascular system in the liver divides the organ into two parts, each of which may be regarded as independent. This division holds good, however only for the vessels entering and leaving the hilum. Because of the early branching off of the cystic artery the gall bladder is an unpaired organ which can be included in the right system as well as in the left.

The peripheral anastomoses in the regions of the hepatic artery and portal vein are too unimportant to assure nourishment to portions of the liver shut off from the chief afferent vessel. In rare cases the isolated portion of the liver may be nourished after ligation of the hepatic artery by the arteries of the hilum. The ligation of an arterial branch and a branch of the portal vein preliminary to resection of the liver makes it necessary to keep to the line which separates the tissue attacked by necrosis from the healthy tissue. Theoretically this line (the medial border of the gall bladder or the right border of the caudate lobe) makes resection of a lobe possible on account of the danger of progressive thrombosis of the portal vein; hemorrhage may be controlled best on the resection surface (Wendell).

The hepatic vein has three divisions and takes three directions according to the anatomical division of the lobes of the liver. For these the employment of intrahepatic ligation comes into consideration since they are injured by the incision. *Lancet* (2)

Moore, F. D. The Associated Pathology of Gall Bladder Disease, with Further Notes for Cholecystectomy. *Surg. Gynec. & Obst.* 9, 225, 228.

Gall bladder infection is more frequent than is generally supposed and disease due to or associated with disease of the gall bladder is very extensive and frequently overlooked. Disease associated with cholecystitis may include practically any abdominal organ and any structure in the rest of the body.

In no case of diseased gall bladder should the surgeon be content with the removal or other treatment of the primary condition alone. He should look also for possible secondary involvement.

The author urges cholecystectomy in preference to cholecystostomy. His cases as he reasons that following cholecystectomy the greater percentage of cases have no recurrence of symptoms, fewer adhesions are formed, biliary fistulae occur much less frequently, the reformation of calculi is very unusual, cholelithiasis does not recur and convalescence is more rapid. *II. A. McKim* M.D.

Leclerc, P. and D'Allaines, G. The Repair of the Principal Bile Duct or Its Implantation into the Gastro-intestinal Tract in Difficult Cases. (La réparation de la voie biliaire principale ou sa dérivation dans le tube digestif dans les cas difficiles). *J. de chir.* 9, 22, 3.

Formerly there are only three operative methods to re-establish the continuity of the principal bile duct viz. direct suture of the extremities of the severed canal, anastomosis with the duodenum or stomach or anastomosis of the gall bladder to the intestine. Today, in addition to these procedures, there are three others from which to choose.

Suture of the two ends of the divided bile duct over rubber tube.

Hepato-duodenal or gastric implantation over rubber tube with suturing of the bile ducts and intestine in one or more planes.

3. Reconstruction of the bile duct by means of a rubber tube implanted in the stomach or duodenum without direct suture.

The author reviews and discusses the cases reported in the literature in which these methods are employed.

In the sixteen cases in which the first method was used there were seven operative recoveries, five later recoveries, one incomplete recovery, one complete failure and two deaths. The use of the second method in thirteen cases as followed by one immediate and complete recovery, five later recoveries, two incomplete recoveries, one unknown result, and four deaths. The twenty-three cases operated on by the third method consisted of two cases of accidental section in the course of biliary operation, six cases of stricture following a previous operation, five cases of neoplasms and ten cases of more or less old biliary fistula. They were then among the most difficult types of cases met with in biliary surgery. The third method of operation is easier than the others and its results are better. The twenty-three operations were followed by two unknown results, one partially successful result, two recoveries lasting for twenty six and eight months respectively, fourteen complete recoveries, and four deaths.

From these study the authors draw the following conclusions:

Early suture simple approximation of the two ends over rubber tube, is suitable for cases in which the two ends are well seen. Accidental section of the bile ducts, as an immediately recognized loss of substance seems to be the typical indication for this method.

Hepato-duodenal or gastric implantation over a rubber tube with direct suture is suitable for cases in which the upper end can be reached so that a supporting suture can be applied, a little of the biliary canal can be dissected, and the duodenum or stomach can be mobilized in an operative region not modified too much by adhesions.

1. Reconstruction of the biliary tract by means of rubber tube, with gastric or duodenal implantation and without direct suture is applicable to the most complicated surgical cases, particularly fistulae of the principal bile duct.

The use of the rubber tube is an important addition since direct suture is often also bile and but is not indispensable and there should be no hesitation in counting it when it entails difficult and dangerous manipulations.

Omentoplasty may be added to the operative procedure as it permits better reconstruction of the principal bile passage.

A greater number of cases is necessary to judge of the value of these operative procedures but the number is already sufficient to warrant the conclusion that the operations give very good results in particularly difficult cases. The chief danger is ultimate stricture of the anastomosis and ascending biliary infection.

W. A. BARRY

Loepfel, H. Preliminary Stages of Acute Necrosis of the Pancreas, and a Contribution to the Advantages of Early Operation in Cholelithiasis (Vorstellung der akuten Pankreasnekrose, als gleich ein Beitrag zur Zweckmässigkeit der Fröh operation bei Gallensteinleiden) *Klin. Wochenschr.* 9 303

Acute necrosis of the pancreas was observed ten times in 190 operations on the bile ducts. The condition is complication of cholelithiasis. When a stone is incarcerated in an end portion common to the excretory ducts from the liver and the pancreas the pancreatic ferment is activated by the bile which passes over into the pancreas taking infectious material with it. Autodigestion of the glands and acute necrosis of the pancreas result. If infection is present the latter may be caused also by obstruction of the flow of the pancreatic secretion alone.

The prognosis is extremely unfavorable if the acute stage persists a number of days. It is more favorable in cases running a subacute course with occasional flare ups, even though the necrosis of the pancreas may be extensive. The preliminary stage of acute necrosis of the pancreas is seen in cases which have not yet progressed so far as the formation of necrosis, but the pancreas and the tissues immediately surrounding it are permeated and covered over by glassy edema. The thor observed three such cases with typical gall stone findings. Operation was performed within the first twelve to twenty-four hours. A severe change had yet been earned in the pancreas by the occlusion of the choledochus. These three cases were cured, while in those which were operated on later than twenty-four hours from the onset, the mortality was on per cent.

The conclusion drawn is that cholelithiasis should be operated on early. The possibility of a begin

ning acute necrosis of the pancreas must be borne in mind when there occurs in the course of cholelithiasis an attack of pain in the upper abdomen which is similar to that of perforation, but localized more to the left. FRICKER (7)

Lindsay E. C. A Case of Multiple Pancreatic Calculi Removal and Recovery *Lancet* 9 2, com, 6

Multiple pancreatic calculi are rare, and relatively few cases of operative removal have been reported. Lindsay's case was that of a man aged 40 years who had a fifteen year history of colicky epigastric pain lasting for periods of two days to week. Food increased this pain. There was no radiation. Slight but continuous wasting had been noted for two years. There was no jaundice and there had been no change in the stools.

At examination the urine was found free from sugar. The X-ray showed irregularity on the lesser curve of the stomach which suggested a penetrating ulcer but another view showed that the shadows were outside of the stomach.

At operation the pancreas was exposed by an incision in the gastrohepatic omentum and an incision made over the most prominent of the masses felt in the organ. The duct was opened and six large stones were removed. The ducts were dilated, their walls were thickened, and the gland tissue was relatively thinned throughout. The duct was re-sutured and a tube drain inserted.

There was drainage from the tube for two days. On the sixth day the tube was removed. Convalescence was uneventful.

The calculi consisted of calcium carbonate with a small admixture of oxalate of calcium and magnesium. Cultures of the pancreatic fluid were negative. S. J. SIMON, M.D.

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Bloodgood, J. C. Tumors of Bone *Northwest Med.* 9:17 22, 304

There are certain data in the history that are of great importance in the diagnosis of a bone lesion. If the patient is under 5 years of age and the X-ray shows that the lesion is central it is not sarcoma. If the X-ray shows that the lesion is periosteal, it is just as apt to be sarcoma as not sarcoma. If the X-ray shows that the lesion is periosteal and involves more than one bone it is not sarcoma or metastatic carcinoma or an hopeless disease. A multiple periosteal lesion is benign but may become malignant later as in the so-called Paget type. If the lesion is central and multiple it may be benign or malignant. If the patient is under 5 years of age it is not malignant, but if the patient is over 5 years it may be one or the other.

In interpreting the X-ray picture it is of great importance to compare the diseased bone with the opposite bone. It must be remembered that there may be an area of bone formation in front, and of bone destruction behind, and if they overlap the X-ray may not show the process.

The author has found Bence-Jones bodies in the urine only in cases of multiple myxomata and metastatic carcinoma. Syphilis is also suggested by periosteal lesions, but in no case of syphilis is there intact bone shell with a central shadow.

If the patient with a central bone lesion is under 5 years of age sarcoma is excluded and the diagnosis rests between the common bone cyst, the less frequent giant cell tumor and the rare chondromyxoma. The common bone cyst usually becomes cured without any treatment. Giant cell tumors predominate in patients over 5 years of age. Myxoma may occur at any age and is the most difficult of all bone tumors to cure without amputation.

The probability of cure of perosteal or central sarcoma is present in not more than 4 per cent of the cases. Giant cell tumors, bone cysts, and syphilitic periostitis are formerly confused with sarcoma and included in the percentages of cure by amputation. The author does not favor amputation for central bone tumor unless the disease has destroyed the limb because the majority of cases are not sarcoma and the probability of cure is very small. Delay will do no harm in cases of chondroma, myxoma, and bone cyst, but the giant cell tumor which can be permanently cured without loss of function is cured more easily if there is an intact bone shell. Only curettage is necessary. Left alone the giant bone tumor will destroy the bone shell and infiltrate the soft parts as completely as the most malignant sarcoma, but will never give rise to metastases. After curetting, the author uses carbolic acid and alcohol 90 per cent zinc chloride, or the tincture. Actual cauterization does not interfere with ossification.

Bloodgood favors immediate operation on all patients over 5 years of age who have a bone with a central cavity with shell. All tumors should be cut into with a cautery only. If not it will recur as it will be transplanted into the fresh wound. Chondroma also is implanted in this manner. All the cauterization carbolic acid alcohol and zinc chloride may be used. The treatment of the cavity depends upon its size. Some circular are left open, others are closed and others require bone transplant. Da Silva Lm. M. N.D.

**Perna, G.** The Ossification of the Acetabulum and the Significance of the Supra Acetabular Tubercle in Man. (*Sulla ossificazione dell'acetabulum e sul significato del tubercolo sopracetabulare nell'uomo*). *Chir. d. organo d. mon. accad.*, 9, 14, 1895.

The author's long and well illustrated article is an epitome of the various theories as to the development of the acetabulum and reports his own investigations in the Anatomical Institute of the University of Bologna. From his studies Perna reaches these general conclusions:

In the formation of the walls of the acetabular cavity in man three bones take predominant part. Because of their situation these may be called the anterior posterior and superior acetabular bones.

The anterior acetabular bone originates from the confluence of multiple bony nuclei which have different age periods and are of different morphology. The first to become manifest is the nucleus of the acetabular bone in the fundus of the acetabular cavity. This is successively added (about the second half of the eighth year) other secondary nuclei—the lateral and medial ischio-pubic and pubo-mechanic nuclei of Staurenghi—which together constitute the complementary ventral bone of the acetabular cavity. At its complete development (the seventeenth year) the anterior acetabular bone almost entirely invests the lateral extremity of the horizontal branch of the pubis

and extends more or less on the ventral part of the acetabular surface of the ilium, definitely forming all the ventral segments of the facies lunata. It can be distinguished, however, from the ilio-pubic and an articular lamina which forms the T corresponding to the iliopectineal line. The first never projects beyond the lower margin of the semilunar surface, while the second is interposed completely between the ilium and pubis and in small part between the pubis and ischium corresponding to the more elevated portion of the ischio-pubic articulation in the acetabular fundus. The upper sub margin forms the anterior segment of the acetabular ridge and shows a depression on the medial portion lateral to the iliopectineal eminence which may be called the ventral depression of the acetabular ridge. After the eighteenth year it fuses with the neighboring bones, first with the pubis, then with the ilium, and finally with the ischium.

The posterior acetabular bone originates from the confluence of anovous bony nuclei which appear toward the ninth year in the dorsal cartilaginous branch corresponding to the cartilaginous acetabular ridge, and successively during the sixteenth and seventeenth years, fuse with the accessory nuclei which become manifested in the remaining ischio-pubic cartilage—the lateral and median ischio-pubic nuclei of Staurenghi. After its complete development it occupies the entire extent of the ischio-pubic cartilage constituting a triangular bony edge interposed between the ilium and ischium and forming the cephalic half of the posterior segment of the facies lunata and the corresponding acetabular ridge. A thin lamina which continues its medio-lateral margin reaching the anterior contour of the great acetabular notch and the acetabulum does not obviously project beyond the limit of the semilunar surface. Its lower acetabular angle extends more or less regularly on the ischium and its upper angle and acetabular margin more or less on the body of the ilium. The middle part of the posterior acetabular bone is a depression which may be termed the dorsal depression of the acetabular ridge. After the seventeenth year this bone fuses with the neighboring bones, first with the ischium and then with the ilium.

The superior acetabular bone originates from a nucleus manifested after the eighth year in the thickness of the cephalic segment of the cartilaginous acetabular segment where it meets the marginal cartilage of the ilium. It later acquires the form of a triangular pyramid with an acetabular surface which completely or in part forms the upper segment of the facies lunata (head of the acetabulum) with an articular surface which first articulates and then fuses with the body of the ilium, and an extra acetabular or anterior surface. The margin interposed between the acetabulum and anterior surfaces forms the cephalic segment of the acetabular ridge which is differentiated by a thick elevation in the anterior surface of the bone under discussion. This elevation constitutes the supra-

etabular tubercle. When completely developed the bone may be quite isolated from the other acetabular formations but frequently articulates and becomes fused with the anterior and posterior acetabular bones. When this articulation does not occur more or less deep and extensive incisure occur in the spaces between the acetabular bones. These may be termed the cephaloventral and the cephalodorsal incisures of the acetabular ridge. The superior acetabular bone is at first independent of the epiphyseal nuclei of the inferior anterior iliac spine but after the eighteenth year fuses with it and then with the body of the ilium.

5. These three bones form the maximum part of the *facies lunata*. The fundus of the acetabulum is developed chiefly from the ischium and partly from the ilium.

6. When the acetabular bones are well developed and articulate, the acetabular cavity is a deep and united by a raised acetabular ridge which with the exception of the dorsal and entral incisures does not show any irregularities.

7. The anterior acetabular bone has special morphological importance in so far as it contains characteristically portions of the acetabular bone which is considered a fourth fundamental piece of the innominate bone. The anterior acetabular bone represents the acetabular epiphysis of the pelvis. The posterior and superior acetabular bones may be considered as epiphyseal bones of the ischium and ilium respectively. The superior acetabular bone is a characteristic of the human species because of the important function of the cephalic all of the acetabulum in maintaining the entire weight of the trunk in the erect position.

8. The bony ridge of the superior acetabular tubercle which is separated from the acetabular ridge by sulcus formed in the extra acetabular surface of the upper acetabular bone gives implantation to the iliofemoral ligament of the hip joint and frequently to the minor iliac muscle. This also is characteristic of the human species as such firmness has great functional importance in the erect position.

9. On account of its origin and its independence of the other acetabular formations the superior acetabular bone must be of special practical importance because if it is absent or malformed or there are lesions of the muscles inserted in it true malformations of the hip joint result from non-development or deficiency in the highest part of the *facies lunata*. As this is characteristic of the human species, the malformations due to defective development reduce the acetabulum to the forms found in lower species.

W. A. BAX.

Alberti, O. The Metatarsophalangeal Syndrome of Koehler (La sindrome metatarsofalangica del Koehler). *Chir. e Organi di movimento* 9, 2, 4, 569.

The author reports six cases of Koehler's syndrome of the second metatarsophalangeal joint. These

cases varied in their intensity but were identical in character there being in every instance pain in the joint in the erect position and in walking, varying swelling on the dorsal surface, apparent shortening of the second toe, and irregularity of the joint noted on palpation, etc. The most interesting and characteristic findings are those shown in roentgenograms, i.e. thickening of the distal half of the second metatarsal, frequently with disappearance of the margin and varying deformity of the metatarsal head which in the beginning suggests osteochondritis dissecans but later how widening and flattening of the articular surface. The proximal phalanx of the second toe is secondarily deformed by wedging of its base on the articular surface. In consequence the articular space becomes altered. Sometimes the periarticular tissues show calcification and osteophyte formations.

The course of the condition is very slow and the prognosis is usually favorable. At most resection of the joint is necessary.

The pathogenesis is complex. The condition has been attributed to various causes. The author ascribes it to the following factors:

The presence of anastomophysiologic conditions responsible for the selective localization of the lesion in the second metatarsophalangeal joint, the head of which is normally the principal point of support of the foot and hence is exposed to the greatest effort. The second toe projects in front of the others and therefore is more exposed to trauma.

General pathologic condition predisposing to alterations in the growing layer of the articular cartilage and interfering with chondral ossification of the metatarsal head.

3. Concomitant causes represented especially by trauma such as the weight of the body acting on tissues already pathologically disposed.

From such causes a disturbance in nutrition might arise in the process of chondral ossification of the metatarsal head, causing first osteochondritis and later deforming chronic arthritis.

W. A. BERNARD.

Roth, P. B. Two Cases of New Metatarsal Disease. *Proc. Roy. Soc. Med. Lond.* 9, xv, Sect. Orthop. 40.

The author first case was that of a woman, 37 years old, who complained of pain and swelling in the right foot for five weeks. The X-ray showed swelling on both sides of the second metatarsal bone. There was no history of injury. The Wassermann test was negative. After treatment with 3 gr. of potassium iodide daily for one month, the patient much better but not cured.

The second case was that of a nurse, 23 years old, who complained of pain and swelling on the dorsum of the left foot at the base of the second and third toes. The X-ray showed swelling on the outer side of the shaft of the second metatarsal bone at the junction of the middle and distal third and a slight

elling at the junction of the proximal and middle third. The Wassermann test was negative and there was no history of injury. The patient was treated with complete rest and 3 gr of potassium iodide a day for six weeks. A complete cure resulted.

JOSEF MITCHELL, M.D.

### FRACTURES AND DISLOCATIONS

Schlegel, A.: An Unusual Case of Retrosternal Dislocation of the Clavicle (Ein seltener Fall von Levato claviculari retrosternalis). *Munchen med Wochenschr.* 9, 1913, 5.

The author first gives a theoretical explanation of the movements of the clavicle in the sternal joint and of the evolution of a retrosternal dislocation of the clavicle and then reports a case of the latter type.

The diagnosis was certain from the appearance. In addition, there were symptoms of intrathoracic pressure and distinct difference in the pulse in the two carotid and radial arteries. Motion in the arm was limited to lateral extension; the horizontal.

Operation was performed, as in most of the cases of retrosternal dislocation of the clavicle hitherto reported. Reposition with fixation was not possible on account of complete cutting away of the capsule; therefore a piece 3 cm. in length was resected from the clavicle.

At the end of three months an almost complete cure had been obtained. It would thus appear that resection is the method of choice in the treatment of dislocation of the clavicle with pressure symptoms.

DEWEE (2)

Senior F. D.: Fracture-Separation of the Lower Humeral Epiphysis. *Fractures* 972, 113, 244.

Fracture separation of the lower humeral epiphysis, which is seen most frequently between the ages of 6 and 15 years, may be due to direct or indirect violence.

There are two common types. The first consists of partial or complete separation of the epiphysis with a small fragment from the diaphysis which remains attached to the epiphysis. In the second the line of fracture is just above the epiphyseal line or may partially involve it. Usually the line of fracture is through the condyles. The latter type is the more common of the two, and is usually due to direct violence. The former is usually caused by indirect violence.

When the violence is indirect, the forearm with the small humeral fragment is driven backward, the upper end of the lower humeral fragment is tilted forward, the periosteum on the posterior surface of the humerus is extensively stripped up, the structure of the elbow joint is injured, and there is extensive effusion of blood into the surrounding muscles and subcutaneous tissues.

Manipulation of the elbow or arm for the purpose of diagnosis must be avoided. An accurate diag-

nosis is impossible without an X-ray examination. Roentgenograms in two planes and control roentgenograms of the sound elbow for comparison are necessary.

If any degree of displacement is present, as attempt at reduction should be made immediately under full anesthesia. The arm should be held firmly while steady traction is applied to the wrist with the forearm fully extended. While traction is maintained the forearm should be slowly flexed. The manipulation should be slow and firm. Reduction sometimes fails because of extensive effusion. A delay of a few days to allow absorption of the effusion defeats its own object as the blood has organized, causes a still more solid resistance and callus is formed very rapidly.

If the displacement cannot be corrected by non-operative means, open operation is indicated. The incision should be made in the midline on the posterior surface of the arm. A pretil or other drain should be inserted. In the after-treatment the elbow should be actively flexed and the hand supported.

Complete anatomical reduction is necessary to prevent excessive callus formation which obstruct movement at the elbow joint. The greater the displacement, the greater the amount of callus that will be formed.

During the after-treatment too great activity either in massage or movement increases the tendency to callus formation, but prolonged immobilization with the forearm in flexion is followed by pronounced rigidity of the elbow.

The elbow fixes the extremity in the flexed position, with the elbow region free or lightly covered. To relieve the pain and to aid absorption, the greatest effleurage is applied to the elbow region from the first day. After a week or ten days the arm is released daily and slightly active motion is given the arm then being replaced in the same position. At the end of the third week the arm is placed in a sling and further voluntary movements are encouraged. Passive motion is to be avoided.

Following operative reduction the arm is left untouched until the tenth day when the sutures are removed. After several days the same routine is followed as in the non-operative cases.

DAVID H. LEVINSKY, M.D.

Staffel, F.: Traumatic Dislocation of the Hip in the Child (Contributo allo studio della lussazione traumatica dell'anca nell'infanzia). *Chir. d'org.* di movimento 3, 604.

Traumatic luxation of the hip is very rare in the young. Of 83 such lesions observed at the Ruggi Institute of Bologna since 1860 only three are found in young persons. Two of the young patients were under 10 years and one was 14 years of age. All three had luxation of the hip caused by fall. Fractures of the neck of the femur are much more common in the young.

In the literature the author has been able to find only forty nine cases of traumatic luxation of

the hip in the young. The most common type of luxation is the posterior luxation. This was of the iliac type in thirty-three cases and of the ischiatic type in six. The tenor luxations were of the suprapubic type in two cases, the ischiofemoral type in one and the obturator type in six. In one case record the type is not given. Thirty-seven of the patients were males, and eleven, females. In twenty-two cases the left hip was luxated and in seventeen the right hip. Ten case records do not state which hip was affected. Two of the author's three cases were posterior iliac luxations of the left hip and one was an anterior suprapubic luxation of the right hip. All were operatively reduced and cured.

Spontaneous reduction as effected in only one of the forty-nine cases. Manipulative reduction is usually easy if done soon after the injury. In old cases time should not be wasted in attempts at reduction.

With the technique which is used today there need be little fear of sepsis. In only three operative cases are there any septic complications. Whether the reduction is effected by manipulation or operation it should be maintained by means of a carefully moulded plaster cast. Failure is due principally to the use of traction apparatus which is not sufficient to maintain the limb in the desired position.

W. A. EASTMAN

Epsstein, G. I. The Surgical Treatment of Habitual Dislocation of the Hip (Zur operativen Behandlung habitueler Hüftluxationen). *New York Arch.* 9, 11, 30.

The observation of a case in which after resection of a tuberculous hip joint periosteum occurred and resulted in the formation of a bony wall of the iliac acetabular roof which prevented upward dislocation of the femur suggested imitation of the method indicated by nature by surgical measures. The method of preventing recurrence of dislocation of the head of the femur by cutting from the ilium a flap of bone with periosteum attached, defecting it, and stitching it to the articular capsule was originated by Koenig, but the two children on whom Koenig operated died of intercurrent disease before a permanent result had been achieved.

The author reports the case of boy, 6 years old, who was operated on by Polenoff. This patient suffered from paralytic dislocation of the left hip and showed other result of poliomyelitis which seriously affected all limbs. The gluteal muscles were paralyzed but the muscles of the thigh were better developed than those of the other side. Through curved incision beginning two and one-half fingerbreadths behind the tensor superior of the ilium and extending to the tip of the trochanter and by partial transverse dissection of all three gluteal muscles the articular capsule was widely exposed and section measuring 5 cm. was resected unavulsed in the neck portion and sutured together again. A semicircular incision

was then made in the periosteum of the ilium 4 cm. above the margin of the acetabulum and a bony lamella shaped like a fan directed with its periosteal covering, deflected downward, and made fast to the capsule with three sutures. A roentgenogram made six months later showed that the artificially created protective roof was well established. There has been no recurrence of the dislocation.

104 NEW YORK SOCIETY (Z)

Kopitz, J. Deformity of the Head of the Femur as an Obstacle to the Complete Cure of Congenital Dislocation of the Hip (Die Deformation der Kopfgegend des Femur als ein Hindernis der vollkommenen Heilung der kongenitalen Hüftgelenkluxation). *Oswest. Med. J.* 1911, 10.

Deformities at the proximal end of the femur are divided into the following groups: (1) congenital changes in the head, the neck, or the entire proximal end of the femur; (2) congenital deformities plus secondary changes which have developed from the use of the extremity affected by dislocation of the hip; (3) changes which have arisen in connection with the reduction, retention, and after treatment of the head of the femur; (4) pathologic changes which arise in the reduced head of the femur in the course of treatment after an apparently complete cure.

Following a discussion of the significance, the basis, the relations, and the origin of these deformities the author draws these conclusions:

Congenital deformities and those arising secondarily before reduction at an age when the head, therefore normal, is still edible—provided there is no concentric stratification in the joint socket—cause little or no disturbance in the function of the joint after reduction.

Deformities of the head which arise during treatment or as a result of after treatment tend to be permanent. The functional success of the treatment is not complete if limping persists in some degree. Recognizing their causes, we must do all in our power to guard against the development of deformities. By more frequent changing of dressings we must inform ourselves in each case whether the articular capsule or the muscles have contracted sufficiently to allow us to terminate the period of fixation. When fixation has not been continued too long there is no need of after treatment to release the contractor. There can be no set rules for all cases.

3. We cannot prevent disturbance of bone formation in the femoral head, the development of an osteochondritis juvenilis. This process is of a progressive character and often leads to destruction of the joint (arthritides deformans juvenilis) but in other cases becomes stationary at a certain stage of development. Such destruction of the head is not directly connected with the congenital dislocation of the joint as it may be observed in joints which were normal at birth. For reasons still unknown, however, it is seen with remarkable frequency



in association with congenital dislocation. The disease process may begin during treatment or some time after it has been finished, but always before the end of puberty it disturbs the good result which had been regarded as secure. On the

basis of these experiences we cannot regard reduction of the joint with good function as a permanent cure unless complete ossification of the epiphyses of the head of the femur has occurred.

VO LO MAYER (2)

## SURGERY OF THE SPINAL COLUMN AND CORD

Frederick C. H. and Spiller W. G. An Analysis of Fourteen Consecutive Cases of Spinal Cord Tumor. *J. Am. M. Ass.* 1922 LXVI, 674

In twelve of the fourteen cases the tumor was accurately localized, accessible, well encapsulated and distinctly operable.

In thirteen cases pain was the first symptom and conspicuous. The original pain rose persists throughout the course of the disease, but in the later stages is more widespread in distribution. It is therefore an important localizing sign. In ten cases pain was present for three or more years, and in three cases approximately ten years elapsed before motor signs appeared.

According to the location of the tumor the most common diagnostic errors are pain associated with movements of the neck diagnosed as Post. Cervic. pain referred to the shoulder diagnosed as rheumatism, pain referred to the shoulder and arm diagnosed as peritonitis, pain referred to the precordium diagnosed as angina pectoris, pain referred to the upper abdomen diagnosed as duodenal gallstones, pain referred to the lower abdomen diagnosed as appendicitis, and pain referred to the lower extremities diagnosed as sciatica.

Given a case with pain of definite localization which is aggravated by movement, coughing, or sneezing, and persists for months or longer to the original site with occasional remissions but without variation except in degree the possibility of spinal cord tumor must be borne in mind.

The distribution of pain and paresthesia differ in that pain, most phenomena is always referred to the same side, that of the lesion, while paresthesia, cord pressure symptoms, may be homolateral, contralateral, or bilateral.

In the classical description of the clinical course of spinal tumors three cycles are mentioned: the cycle of root pain (the Brown Sequard cycle), and the cycle of motor and sensory paralysis. In not one of the fourteen cases there typical Brown Sequard picture.

Motor disturbances were present in each of the fourteen cases in greater or less degree according to the size and location of the tumor.

Spasticity is always forerunner of weakness or paralysis and in most cases the difficulty in locomotion is due to the spasticity rather than atrophy.

The sequence of symptoms is pain, paresthesia, and paralysis.

Too much stress must not be laid on the presence of spinal block. This is late rather than an early symptom. Xanthochromia as present in only five cases and its duration as five, three, and two years. The Queckenstedt or Ayer test for spinal block should be applied in all cases as it may reveal block before xanthochromia appears. A positive finding by either method should be regarded as only confirmatory, however, more negative findings do not preclude the presence of tumor and positive findings have been noted in cases of lesions other than tumors.

It is a matter of very little consequence, when once the segmental localization is established, whether the tumor is intradural or extradural or what its position is with relation to the spinal cord. In the cases reviewed there were no intramedullary growths.

Two of the patients died. In one of these cases two-thirds of the tumor as within the intracranial cavity only one-half of the diaphragm remained the respiratory act, and respiratory breakdown occurred during the operation. The other death was due to embolism.

When making the opening in the spinal column too low it should be borne in mind that the level of the lowest lamina to be removed should correspond to the location of the segment representing the highest level of sensory loss.

To prevent recurrence the operator should remove with the tumor that portion of the meninges from which it originated. In the cases reviewed there was only one recurrence, second operation was advised but not permitted.

Recovery of function is a matter over which the surgeon has no control. Assuming that the tumor was removed without injury to the cord, the return of function will depend on whether the symptoms are due to pressure or to cord degeneration. If to the former functional recovery will be complete, if to the latter it will be more or less limited. When the symptoms are due to pressure alone, sensory and motor function recover surprisingly promptly even when the tumor is present for several years. Within a few days of the operation, first sensory and then motor function returns.

There are only two cases in the authors series with absolutely no return of function.

The article contains several interesting illustrations.

CARL R. BREWER, M.D.

## SURGERY OF THE NERVOUS SYSTEM

Sachs, F. and Malone J. V. An Experimental Study of Methods for Bridging Nerve Defects. With Description of New Method of Autotransplant (Auto-Autotransplant) *Arch Surg* 1923, 314

The authors have experimented in nerve repair on dogs to ascertain the best of three methods to employ when end-to-end anastomosis is impossible.

The most careful technique used, including very gentle handling of the nerve, a bloodless field, the control of bleeding in the nerve by means of cotton pledgets soaked in warm saline solution or the injection of warm saline solution into the nerve and the approximation of end-to-end nerve tissue.

Several methods of repair were used but all except three are discontinued. The latter are as follows.

Anastomosis of the central and peripheral ends of the injured nerve into longitudinal incisions in normal nerve. The freed cut-ends of the injured nerve are sewed carefully into longitudinal slits in nearby nerve. In eighteen dogs the peroneal nerve was cut and then sutured to the tibial nerve.

1. Anastomosis of the central and peripheral ends of the injured nerve to flaps cut in the same quadrant of normal nerve. The peroneal nerve sutured to flaps in the tibial nerve in fifteen experiments.

2. Autotransplantation of half of the central end of the injured nerve, the segment removed being just long enough to bridge the defect (autotransplant).

The nerves operated upon were exposed in various intervals and tested with electricity peripherally by the muscle contractions, and centrally by reflex stimulation of respiration.

The animals are finally killed and the nerves removed and inspected after being cut transversely into sections 5 to 10 microns thick or longitudinally. Every fifth section is mounted so that the nerve fibers could be traced in serially.

Other tissue the nerve tissue is unsatisfactory for bridging nerve defects. The most successful method for large defects consists in implanting the nerve ends into adjacent healthy nerve.

Hemorrhage from nerves may be controlled by distending the end of the nerve with salt solution.

Accurate approximation of the nerve ends is essential for the best results. Fine silk sutures far less reaction than catgut.

The conclusions drawn by the authors are summarized as follows.

1. Nerve fibers will grow down the trunk of healthy nerve through longitudinal incision without requiring function and some of the fibers will connect up with the peripheral end. It is therefore of advantage to implant both ends.

On account of the branching of regenerating fibers sufficient number of axons are produced

when a nerve is cut longitudinally to fill the sheaths in the implanted nerve indicating that end-to-end anastomosis could be satisfactory. This technique has been used successfully in faciohyopogonial anastomosis.

3. Malone's test to determine whether nerve has crossed a line of suture is a valuable index of nerve regeneration.

4. Absolute alcohol may inhibit, but does not prevent, neuroma formation.

5. Accurate approximation is the most important factor determining nerve regeneration. Because of the presence of internal plexuses in nerves it is not so essential to maintain the original anatomical relation as was heretofore supposed. Whenever nerve regenerates, axons are formed at the regenerating end and consequently the central end of fiber does not necessarily connect with its peripheral end.

6. The method of autotransplants is to be preferred to cable transplants because no normal nerve need be injured and the operation can be performed in one field.

7. The double implantation method cannot be used if the nerve to be implanted is larger than the other nerve and if there is adjacent nerve.

8. The second type of transplant has no advantages over the others.

9. The method of choice for bridging large defects is the double implantation method of anastomosis. Its advantage over the autotransplant is that some fibers bridge the suture line to traverse.

MALONE HONAR M.D.

Latarjet A. Resection of the Nerves of the Stomach. Operative Technique and Clinical Results. (*Réssection des nerfs de l'estomac, technique opératoire résultats cliniques*) *Bull Acad de Méd Par* 9, LXXV, 63.

The extrinsic nerves of the stomach constitute three groups. The group of the lesser curvature composed of the gastric branches of the anterior and posterior ganglions situated at the interior of the small omentum. The second or duodenopyloric group is constituted of filaments coming from the hepatic nerves which are situated chiefly to the right of the pyloric artery and approach the duodenopyloric canal in the upper part of its posterior surface. The third group is that of the greater curvature which is constituted of filaments coming from the coeliac plexus and is found only in the transverse segment of the stomach.

The author carried out experiments on dogs to study the effect of blocking the extrinsic nervous system of the stomach by section and of stimulating the pneumogastric or sympathetic branches.

From the point of view of motility the stomach may be divided into two distinct segments. The first is the critical portion. Section of the nerves

of this segment diminishes tonicity while electrical excitation of their peripheral ends causes contraction ring which is not associated with peristalsis. The second motor section is the transverse part. Peripheral excitation of the nerves distributed here provokes peristalsis which is propagated to the pylorus.

Total blocking does not cause suppression of gastric movement. Section of the nerves causes an immediate vasodilation which does not extend to the gastric mucosa.

The anatomical and experimental findings have induced the author to try nerve section or resection of the gastric nerves in clinical cases in order to obtain (1) a diminution of sensus cruris in the enervated territory (2) diminution in the tonicity and frequency of gastric contractions and (3) diminution of acidity. The technique of the resection of the various nerve groups is described. Such a resection was done in twenty cases, viz. six cases of tubercular gastric crises, six of gastric or pyloric

pyloric ulcers, and ten of gastropathies without any apparent lesion.

In the gastric crises of tabes the operation is less severe than other operations usually performed for the condition but has only a symptomatic effect, relieving pain and perhaps hypersecretion.

The value of the operation in the treatment of ulcer has not been determined. In all such cases the thorax supplemented it by gastro-enterostomy. All of the patient were greatly benefited and may be considered cured but this result may be due to the combined operations.

Blocking of the nerves is indicated chiefly by gastropathy with symptoms indicating disturbance of function but without any apparent lesion. Frequently in such cases gastro-enterostomy is ineffective while nerve blocking is successful. Eight of ten cases operated upon in this manner were cured. One of the five other patients as it pertains and had very severe gastric crises, and the other died from an intestinal complication. W. A. BARNES.

## MISCELLANEOUS

### CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

**Primrose A.** The Secondary Manifestations of Malignant Disease. *Ann Surg* 912, 1910, 3.

Secondary cancer metastases occurs chiefly through the lymphatic channels and present great anxiety both the secondary tumor or tumors may exceed the primary.

Handley demonstrated continuous extension of cancer cells from the breast along the lymphatic channel to the glands of the axilla and the infraclavicular and suprascapular regions, the pleura, the lungs and the opposite breast thence to the epigastrium and the axilla by the lymphatics of the round and falciform ligaments to the liver and thence to the peritoneal cavity.

EWING states that for months or years the soil is prepared in lymph node draining primary focus of carcinoma, the most recent changes consisting of moderate swelling of the gland diffuse hyperplasia, catarrhal exfoliation of sinus endothelium, multiplication of follicles and at later period trophic and fibrous or fat in anion of the node. These changes he attributes to the absorption of uterine and bacterial toxic product from the tumor.

On the other hand, carcinoma of the breast may be responsible in rare instances for distant metastases while the local lymph glands escape.

When clinical diagnosis of primary carcinoma has been made we must assume the involvement of lymph glands even if there is no gross manifestation of the condition.

In involvement of the supraclavicular lymph glands the root of the neck on the left side is most frequently observed in cases of cancer of the body of the stomach, the thoracic duct being the channel of

invasion. Treves first drew attention to these facts in 1896.

Alvarez formation in connection with the secondary manifestations of malignant disease is due to the transference of pyogenic organisms from an ulcerating surface. Primary carcinoma of the appendix is in some cases connected with the development of tuberculous nodules which is wholly a manifestation of that pathological process.

Cancer of the rectum and rectosigmoid, secondary metastases are found in the lymph glands and in the liver.

Sometimes a single lymph gland becomes the seat of metastatic growth, the other nodes of the neighborhood showing no evidence whatever.

Implantation of carcinoma upon serous surfaces occurs with great frequency especially within the various sac of the peritoneum as in general bilobular carcinomatous. The implantation and dissemination of cancer during operative procedures is dangerous which must be guarded against in operative technique.

The dissemination of malignant tumors may occur through the blood stream. This is characteristic of sarcomata because of the fact that these growths are closely associated with the blood vessels in their intimate histologic structure and their immediate surroundings. Malignant sarcomat of bone rapidly metastasize in the lungs, as do also those which occur in the kidney in young children. Many tumors, both simple and malignant, such as certain enchondromata and the hypernephroma first described by Grawitz, invade the blood vessels by direct continuity of growth.

Metastases in bone may form by direct spread from the primary growth or through the blood stream or lymphatics. Bone is destroyed at the site

of the growth and spontaneous fracture of a long bone may occur. In some cases the presence of the growth may not be suspected by the patient or the physician.

MORRIS H. KANE, M.D.

Mayo, C. H. End Results in Cancer as Influenced by Type, Reaction, Location, and Age. *Ann Surg* 9: 1241, 1908.

A greater number of persons in this country are killed by cancer in one year than were killed in our ten years of war. The disease is presently increasing at a rate of about a 5 per cent a year. It selects its victims from the mature and aged rather than from the young, the greatest mortality being between the ages of 40 and 60. Women are affected to a greater degree than men; the difference lies in the involvement of the organs of reproduction.

As a result of greater publicity regarding the disease and its destructive effects, persons with suspicious lesions consult the physician earlier, thus making it more possible to prevent or retard the development of cancer.

Enormous and apparently contradictory data due to degeneration or irritation contribute to the development of cancer. Pathologists and biologists have suggested many hypotheses. The view of these investigators seems to harmonize in the acceptance of regression or degeneration of the cells, loss of function, and proliferation as processes in cancer and of irritation as a factor. Within the last few years a dissenting group of pathologists has asserted that it is not the functioning cell which starts cancer by degenerating or regressing, but the immature, living, or repair cells of the embryonic type.

While several factors, such as age, exhaustion of the cell, and loss of function or control, may have their place in the development of cancer, the chemical environment, however developed, is undoubtedly the most important stimulating force. The cells of youth are resistant to cancer, but if once affected, the softer tissue and better lymphatic and vascular circulation render growth and metastasis more serious.

From the clinical standpoint great progress is being made in attacking the cancer problem. A higher percentage of early operations, more radical operations, and marked progress in roentgen ray and radium treatment account for the improved end results.

The action of the roentgen and radium rays on the malignant cell is identical provided the lengths are equal. In the treatment of malignancy, especially in the cavities of the body, radiation therapy is most effective. When radium is applied directly to the tumor and the roentgen ray applied to the possible regional and deep metastatic areas. The action of the rays causes complete physicochemical change in which the cell becomes ordinated, the nucleus substance fragments and finally all powers of cell regeneration are lost. The debris is then carried off by phagocytes and expelled by excretory organs. When vascularity is one of the features

of the condition, radium is most excellent. The end result of both roentgen ray and radium therapy is the development of fibrosis, which often changes the type of malignancy.

From the standpoint of the pathologist, most important advances have been made. The immediate frozen section gives a true picture of the disease without chemical or embalming changes of tissue. Resistance to the growth is shown by lymphatic infiltration and round cell activity, which indicates the development of fibrosis. On the other hand there may be no evidence of fibrosis, but rather a very active cellular growth with proliferation, a most serious type, especially if operation is not performed before the lymphatics are involved. The probability of the cure of cancer can be largely foretold by the pathologist and depends in large measure upon the presence or absence of fibrosis.

In the Mayo Clinic the late results following operation for cancer have been found to tally very largely with the cell evidence.

### SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Ten Broeck, C., and Baxer, J. H. The Tetanus Bacillus as an Intestinal Saprophyte in Man. *J. Exper. Med.* 9: 334, 1906.

It is well recognized fact that bacillus tetani is widely distributed in nature, but the role of man as a carrier of this organism has received little attention. In the literature it has been repeatedly stated that man may carry the tetanus bacillus in his digestive tract. The statement is based apparently on his assistance on the work of some other investigator than the author of the article and on the fact that this hypothesis offers the best explanation for certain idiopathic cases of tetanus and the cases following typhoid fever, dysentery and hemorrhoidal operations.

The case which first interested the authors was one in which the source of the infection seemed to be fecal contamination of bed sore. In this article they report the results of the examination of the feces of seventy-eight persons and present evidence which seems to indicate that in some persons tetanus bacilli are normal inhabitants of the intestinal tract. With one exception their examinations were made on the feces of male Chinese, who live in more intimate contact with the soil than the average European or American; therefore their findings may not be duplicated in the Occident.

It is often very difficult to obtain the organism in pure culture though they are plated repeatedly. Accordingly it is evident that there are organisms which interfere with the production of tetanus toxin or destroy it and that the injection of mixed cultures is not a reliable method for the detection of tetanus bacilli.

The authors examined forty-three stools of patients in the hospital and obtained tetanus bacilli from eleven (25.6 per cent). A few months later



Spindle-cell sarcoma presents most of the characteristics of round cell sarcoma, but is less invasive, the roentgenogram suggesting some limitation, especially in the medullary canal where a slightly denser area appears at the periphery of the growth. This tumor does not metastasize as readily as the round cell sarcoma.

Periosteal sarcoma is characterized by new bone production laid down in striae which are perpendicular to the shaft. The deposit of new bone is entirely in the soft tissues and does not reach the bone proper. The cortex may be destroyed later in the disease. This tumor is seen most often before the thirtieth year of age and, like all malignant tumors, is invasive.

Osteosarcoma is usually cortical in origin. Bone production is pronounced. As in periosteal sarcoma, the new bone is deposited in striae perpendicular to the shaft but, unlike the latter, is found within the tumor as well as in the invaded soft tissues. In general, the degree of malignancy may be determined to a considerable extent by the amount of new bone formation; the more malignant the type the more rapid the growth and the more limited the bone formation. Bone destruction is seen early; the cortex is destroyed and the medullary canal invaded.

Bone carcinoma is also metastatic and of medullary origin. As a rule it is seen at the middle of the bone (the nutrient foramen). There is only bone destruction, no bone production. The tumor never involves a joint and is seldom found below the elbow or knee. It is essentially a disease of the later period of life.

Myloma is a true bone tumor. Several tumors of this type may occur simultaneously at different locations in the osseous system. They are always medullary in origin. They give first the appearance of expansion and later of destruction of the cortex.

Giant cell sarcoma is classified with the benign tumors. It is usually medullary in origin and found in the ends of long bones. It does not produce new bone in its growth, but shows marked bone destruction. The cortex is intact but expanded. The growth is multilocular; usually occurs after middle life and does not metastasize.

Bone cysts are medullary in origin and produce marked bone destruction. They tend to extend up and down the medullary canal expanding, and at the same time thinning out, the cortex, so that they present a cylindrical contour and often cause pathologic fracture. They are usually multilocular; are found in the ends of long bones, and occur in early life. According to the author's experience, they are all simple.

Fibrosarcoma destroys bone, are medullary in origin and occur as single tumors. They thin out the cortex but do not destroy it. New bone is formed and the cortex does not expand. The tumors have no single area of destruction and are not multilocular.

Chondro-osteoma and osteochondroma present either preponderance of cartilage over bone or of bone over cartilage. They are either medullary or

cortical in origin. They produce bone destruction with expansion of the cortex so that a cylindrical tumor results. They are usually multiple. Both bone destruction and bone production are present.

Osteoma is are cortical in origin and show marked bone production without bone destruction. They extend directly from the shaft or the body of the bone. They do not invade the tissues but push them aside.

Exostoses are bony growths from the cortex extending out from the body of the bone and pointing away from the nearest epiphysis. They are long and narrow and may have an osteoma at their end.

Brief descriptions are given also of such conditions as ossifying hematomata, myositis ossificans, intercalaria of bone, syphilis and other types of osteomyelitis in which the roentgen picture may suggest a bone tumor. Points differentiating them from the tumors they resemble are enumerated.

ADOLPH HARTMAN, M.D.

#### Crane, A. W. The Roentgenological Aspects of Achylia Gastrica. *Am. J. Roentgenol.* 9: 57

The material which forms the basis of the author's study was approximately 1,000 cases in which, with few exceptions, the stomach contents were obtained in five or six fractions at fifteen minute intervals, beginning one-half hour after an Ewald test meal.

The importance of achylia gastrica to the roentgenologist lies in (1) its frequency in cases of gastro-intestinal pathology, (2) its association with abdominal pain, (3) its association with intestinal disturbances and (4) its influence on the interpretation of roentgen ray signs.

As regards the frequency of achylia gastrica Crane states that it was found in 6 per cent of the entire series of cases. In none of these cases was ulcer diagnosed or found later by examination or operation or autopsy. The author grants that the conditions may occur simultaneously but believes that this is exceedingly rare.

Pain was frequently associated with achylia but is scarce as often difficult to find and sometimes inexplicable. In many of the cases it is traceable to associated lesions such as gastric cancer, gastric syphilis, gall bladder pathology, pericolic adhesions, mucous colitis, or spoodylitis deformans. The diversity of causes of pain and the number of cases of achylia without pain suggest that the achylia itself may not be responsible.

The association of achylia with diarrhea has been emphasized by various authors. In Crane's series of 58 cases diarrhea was present in twelve. Mucous colitis was found only twice. The rapid expulsion of the barium meal with intestinal hypermotility may thus find a rational explanation if the roentgenologist is enabled to interpret his roentgen ray findings in conjunction with the laboratory sheet.

The difference in the interpretation of the roentgen ray signs according to whether achylia is present or absent is most strikingly illustrated in cases of the

the syndrome of duodenal ulcer. The duodenal ulcer and the achylia type of gastric peristalsis may often be indistinguishable. Very commonly (on or off) peristaltic contractions may be simultaneous. Thus, in connection with the rapid expulsion of stomach contents and the often incomplete filling of the duodenal bulb due to the rapid passage of the barium, may appear to give the syndrome and the bulb bar deformity of what is the duodenum. If the stomach contents show a total absence of free hydrochloric acid, the roentgenologist should never make the diagnosis of duodenal achylia without doubly proving the persistence of a characteristic deformity of the duodenal bulb and then excluding adhesions, pressure, and reflex spasm as causes of the deformity.

Gastric cancer and gastric syphilis may both be associated with achylia; the roentgen signs being indistinguishable. Pernicious anemia and cancer may show a striking similarity in the blood picture, and both may be associated with abdominal pain, emaciation, and achylia but knowledge of the achylia type of gastric peristalsis will very effectively confirm the absence of a filling defect and give added assurance to the roentgen ray interpretation.

In conclusion the author states that achylia is associated with such an extraordinary range of pathologic conditions that conclusions regarding it must be based only on very large series of cases. Because of the frequency of achylia in persons over 50 years of age it is probably confused with many pathologic conditions not related to it. The author therefore claims nothing for his figures except that they show in general a 50 per cent experience regarding the roentgenological aspect of this interesting secretory disorder of the stomach.

ALBERT HARTMAN, M.D.

Dalheim, Laquerrière and Alford Kahn. A New Method for the Roentgenological Exploration of the Kidney—Pneumoperinephros (Bar en aneurisme péricardiale d'exploration radiologique du rein le pneumopérinephros). *J. de radiol. et d'Electrol.* 9, 19, 1920.

The authors refer to the method of pneumo-kidney introduced by Carelli and Sordelli of Buenos Aires in 1909. This method has lost its value because many who tried it did not obtain the results reported by its originators or met with accidents in its use. The authors, however, have used it successfully with slight modifications, in more than sixty cases. They insert the needle over the second lumbar process as in the original method but direct it more outward and downward. It thus traverses the thick trans-costo costal ligament of Henle and is kept away from the mediastinum and the fatty cellular tissue surrounding the arteries and veins. Oxygen or carbon dioxide is then injected. From 500 to 1500 c.c.m. of oxygen is sufficient but a greater quantity of carbon dioxide is necessary.

The authors report eight typical cases of pneumoperinephros exploration. The method is indicated when the classical methods of exploring the kidney

region have failed, and is of great value when there is close co-operation between physician, surgeon, pathologist, and roentgenologist. W. A. LARSEN.

Rothbart, L. The Treatment of Frontitis with the Roentgen Ray (Krankheitsbehandlung der Frontitis mit Röntgenstrahlen). *Archiv f. Klin. u. Expt. Med.* 93, 1920, 376.

The treatment of frontitis with the roentgen ray as reported in the German literature during the early years of the war but was later forgotten. Holzknecht speaks of long continued effect on the blood vessels. This must be due to direct action on the vasomotor system or indirect action on the circulation through an increase in the internal secretory activity of the connective tissue.

In 12 to 15 of 100 cases treated by Rothbart a subject or object cure, or at least great improvement, was obtained. The hard therapeutic ray is altered through 3 or 5 mm. of aluminum. According to Holzknecht prophylactic irradiation given in the autumn will prevent the development of chilblains during the winter.

ROTHBART, L.

Case, J. T. Technical and Clinical Aspects of the New Deep Roentgenotherapy. *Am. J. Roentgenol.* 9, 12, 1920.

The term new deep roentgenotherapy refers more particularly to the application of shorter wavelength radiation. It is further justified by the establishment of new information concerning the physical and biological factors underlying the principles of therapeutic roentgen ray applications, especially the behavior of scattered radiation, such for the first time as the history of roentgenology permits the assurance of reasonable degree of precision in dosage. Emphasis is laid upon the necessity of knowing the approximate wavelength of the ray.

Value lies in understanding the rationale of filter, choice of size and number of fields, and the target distance from which the application is made. It is assumed that there is agreement as to the rationality of employing a combination of radium and roentgen ray therapy whenever the situation of the pathologic lesion makes this possible. Only the treatment of malignancy is considered at any length in this article.

As regards the selection of cases for deep therapy, it is probably wise to exclude at least for the present, those patients whose malignancy has progressed to the stage of distant metastases and utter hopelessness of external metastases in the bones, the liver or the lungs. In such cases the application of the method does involve in the new method could very probably hasten the inevitable, and thus tend to bring unfair discredit upon the radiologist. As regards distinctly operable cases, the author holds with the majority that the treatment of choice is operation combined with such radiation as may seem appropriate. His estimation, pre-operative irradiation is of even greater importance than post-

operative, the irradiated cells being in such degree and manner influenced by this treatment that there is certainly less danger of transplantation during the surgical interference.

Preparation is just as advisable when deep roentgenotherapy is to be administered in massive doses at single sittings as when major surgical procedure is to be followed. Preliminary rest in bed, attention to eliminative processes, dietary regulation, blood and urine examinations, and even a blood transfusion (if it is the type of case in which such a procedure would be considered before surgical operation) are essential. Plenty of fluid should be administered by mouth, and if necessary by enema or intravenous injection. Lactose or glucose with alkalis may be added to the liquid to advantage. The patient should come to the treatment room with an empty stomach. Morphine administered hypodermically just previously lessens the tendency to nausea and vomiting and quiets the patient during the tedious and often uncomfortable treatment.

Before beginning the radiation a definite plan should be worked out so that all parts of the lesion may be given the desired amount through the most suitable ports of entry. Charts prepared by Desautel and by Hotfelder present the best available means of planning the fields and the percentage of the skin erythema dose to be administered through each one. The principles of carcinoma or sarcoma doses as laid down by Seitz and Wintz are considered by the author as the best basis of procedure. The object of attack is to deliver to the same under fire approximately 50 per cent of skin erythema dose for carcinoma, and 70 per cent of the skin dose for sarcoma, this dose to consist of homogeneous radiation equally distributed at one sitting to all the pathologic or suspected tissues. In the author's practice, the dose is seldom delivered in one day but more often is given within two or three consecutive days, with an added day for the radium application.

As regards the technique of application, Case states that in the treatment of uterine carcinoma four areas are irradiated in addition to the intra-uterine and vaginal radium treatment. The proportion of the skin erythema dose given through each of the four portals of roentgen ray treatment depends upon the distribution of the lesion and the vertical measurements of the pelvis. A filter of mm. of copper is used. In pelvic work target skin distance of 50 cm. is maintained. For the treatment of breast, neck, jaw and face malignancy target skin distance of 75 cm. is preferable to shorter distance. With the author's technique it requires 800 ma. mm. tes. working at 500 kv. with 8 ma. through the tube at 50 cm. target skin distance.

Thick filter and fields mentioned to produce mild erythema on the skin of the neck. It is important to complete the introduction of the entire dose within the shortest reasonable time. There is little likelihood of accomplishing as much toward the destruction of the disease at any subsequent attack

as at the first one. The techniques employed at Freiburg and at Erlangen are described at some length.

Although the dosage may be checked up by some method of xonometry the individual installation under the peculiar working conditions of each laboratory will become standardized, and chief dependence will be placed on the reproduction of the physical factors (voltage, milliamperage through the tube, time of application, filter, target skin distance, and size of field of entry) rather than upon the electroscopic readings.

As regards the protection of the patient, Case states that the tube enclosure is not considered sufficient. The patient is covered with protective material except for the opening through which he is being treated. Lead or lead rubber is used and is grounded.

Among the immediate effects of treatment, nausea and vomiting were frequently noted. When glands of the neck, axilla, or groin were treated, swelling and reddening of the area promptly followed but the swelling disappeared in from twelve to twenty-four hours. In general, primary blush or reddening of the skin was noted which lasted one or two days and was followed in a week or ten days by the deeper reddening of the erythema dose. The reddening gradually faded and was subsequently replaced by brown discoloration of the skin. Following intense radiation to the chest or neck, patients frequently complained of temporary dysphagia, dyspnea, dry cough, disturbance of the voice at times approaching phonia, pharyngeal irritation stimulating pharyngitis or tonsillitis, and edematous reddening of the uvula, pillars, and pharynx, but these conditions usually passed away in four to ten days.

The author has not observed any permanent deleterious effect upon the blood count resulting from the massive doses. Only slight temporary changes in the red and white counts were noted. In

limited number of observations the blood sugar was moderately lowered and the blood nitrogen slightly elevated. No marked constant change in the coagulability of the blood was observed. The diminished blood sugar can be explained easily by the lessened alimentary intake during and immediately following the treatment.

Rectal and bladder tenesmus were fairly constant sequelae of pelvic irradiation in massive doses. The daily bowel movements began to increase in number

about the third day, reaching ten to fifteen in twenty-four hours by the eighth or ninth day and then gradually returning to normal at about the same rate.

Roentgen intoxication is one of the less serious complications of the newer deep therapy though it stands out as one of the most disturbing to the patient. Headach, nausea, vomiting, and weakness are fairly common but fortunately are transient, usually disappearing within forty-eight hours.

When repeated treatments are indicated they should be separated by an interval of from six to



1 to 4 weeks. In no instance were more than three main applications given. In several of the cases a herpetiform skin eruption followed the treatment. There was a check on it but no real damage. This skin was noted in any instance.

The immediate effect upon the disease has been very encouraging. In a series of consecutive cases (excluding those in which cachexia was present) the occurrence of prompt improvement is relatively increased. Pain was usually relieved, bloody and purulent discharges were decreased or disappeared, and the general condition was improved. While some cases responded no better than before it is generally agreed that palliation was secured more promptly in a large percentage. Few the visible evidences of the disease disappeared. German roentgenologists who have been giving this treatment for four or five years, have a small series of patients now alive three years after such treatment given. With what they considered newly ideal technique.

In conclusion the author states that the report of clinical results by European roentgenologists should be accepted with considerable reserve but the enormous fund of information concerning the physical and biological basis of deep therapy furnished by them and by American investigators which all permit most intelligent use of the latter. A lengthy roentgen radiation should be gratefully accepted. A definite advance has been made in deep radiotherapy. Unprecedented good results of least temporary duration being obtained more constantly in a larger percent of cases. Radium therapy will be more than ever successful in gynecological malignancy been combined with the intelligent application of the new more penetrating roentgen rays which by their adaptability to conversion into practically homogeneous radiation will supplement the internal use of radium to reach the lymphatic basins along which extension of the malignancy disease occurs. (Author's name) 311

Martha, C. I. and Uhler, C. Roentgenotherapy of the Intracranial Parasites Following Spinal Air Injections. *Am J Roentgenol* 9 342

As more accurate methods for the diagnosis of intracranial disease are gradually being developed, it is reasonable to provide it should be given. The injection of air into the subarachnoid space and intracranial air and oxygenated by Dandy offer wonderful possibilities. The authors had the opportunity to examine fourteen cases in this manner during the past year. On the whole their results have been very satisfactory and they have had no mishaps.

The technique used essentially that recommended by Dandy. The examination causes discomfort but the information obtained often far outweighs the importance of the symptoms produced. Headache followed each injection. At times it was quite severe but it always disappeared within twenty-four hours. In one case pain developed

in the back or in a leg during the injection, possibly because very filament became caught in the needle. This pain also as usual transient. Eight of the patients remained in the hospital for twenty-four hours or longer and their pulse and temperature were charted. A visible rise of temperature as noted which probably had some relation to disturbance in pressure on the ventricles. No attempt was made to retard the absorption of the injected air except in one case. In this instance an amount remained in the lateral ventricles at the end of six days, but none of the other injected structures could be made out.

The most important contraindication to the method is brain tumor in the posterior fossa. When there is any question regarding the presence of such condition, ventricular puncture should be done first through a small trephine opening to equalize the pressures on the two sides of the medulla. Infection and hemorrhagic conditions have also been mentioned as contraindications. The method appears to be of the greatest value in the study of cases of hydrocephalus in which it is of importance definitely to locate the point of obstruction.

To facilitate the study of the details of the intracranial passages a description of the cerebrospinal fluid circulation is given and several recent grammars of normal brain are discussed. If an obstruction occurs in one of the narrow passages, it is in the quadrigeminal cistern or the foramina of Luschka and Magendie. Distention of the third and lateral ventricles results from back pressure. This condition is called internal hydrocephalus. If the obstruction occurs in the basilar cisterns or the branches of the cerebral sulci as often happens following meningitis, distention of all the ventricles is apt to occur. Condition designated as communicating hydrocephalus.

It is Dandy's opinion that normal sulci are 5 to 6 mm and that the presence of such filling indicates blocking of either the basilar cistern or the sulci themselves. In thirteen series of fourteen cases the sulci were filled only four times whereas the trunk was filled ten times. In four cases there was questionable filling of a few of the sulci. Since the trunk was filled normal in most of the cases in which the air did not fill hydrocephalus as probably present. They do not feel therefore that failure of the sulci to fill indicates blocking of these structures.

Yes and no in the ventricles. Dandy and colleagues pathologic. Then of these are cited briefly together with their roentgenograms. Case that of a child of 3 years was considered case of hydrocephalus of the communicating type. It seemed possible that there was a blocking in the basilar cisterns possibly due to meningitis. Case a similar case that of one of 3 years. The conclusion as probably the result of meningitis causing occlusion of a large number of sulci. The third case clinical diagnosis of sulci in tumor probably lying in the quadrigeminal bodies as made. The

roentgenogram suggested an obstruction in the aqueduct of Sylvius.

In conclusion the following summary is appended:

Injection of the subarachnoid space with air appears to be a relatively safe procedure when the cases are properly selected. The after effects of the injection are not serious. The proper interpretation of roentgenograms of the skull made following such injections should aid materially in improving the mortality statistics of brain surgery.

ADOLPH HARTMAN, M.D.

Bamper, C. M. The Ultraviolet and X-Ray as Physiological Complement in Therapeutics. A Newly Established Clinical Treatment. *Am J Roentgenol* 9 12, 570.

About three years ago the author began clinical experimentation with a view to increasing skin tolerance to the X-ray and finding some method to prevent or overcome the undesirable sequelae of mass dosage. Proof as to how ultraviolet light and doses of these effects or may operate in breaking up the cycle of changes following mass dosage could be given only clinically even if our knowledge of the action of the actinic rays were any much more exact.

By means of rapidly repeated erythema doses of the actinic rays, areas of skin may soon be brought to such a condition that about fifty times the original dermatitis dose of this ray will be necessary to produce even the mildest erythema. This increased tolerance of the skin is not confined to the action of the actinic rays alone but includes also to less degree the roentgen rays. Whether this is due solely to the tanning produced or to decreased irritability due to the repeated inflammatory reactions or whether the blood chemistry changes following the application of the ultra violet light be an intoxicating or damping effect upon the cycle of tissue changes set up by the roentgen ray dosage cannot be stated. Clinical evidence seems to show that all three factors have part. Surface blood gradually by exposure to sunlight or oak applications of the actinic rays not causing noticeable erythema show a slight increased tolerance to roentgen ray dosage but this increase is much less than that used by repeated erythema rapidly produced by the quarts mercury burn. Increased tolerance does not follow whether the surface is or not but is not great when it is ingested.

The conjoint use of the ultra violet and the roentgen rays as suggested by the author by comparative study of their local and general effects and by the case of the high beginning roentgen ray dermatitis could be cut short clinically at least, and it is up to vigorous actinotherapy. Although he is cautioned by prominent oestrogen therapists against superimposing an actinic erythema upon skin that is already received dermatitis dose of the roentgen rays he has been doing it for number of years without causing angle depletion or symptoms which would indicate that dermatitis had

occurred, and has greatly exceeded dosages which before the use of this method produced dermatitis regularly. These well merited cautions, however, caused him to treat a few hopeless cases first and wait for months before increasing the dosage proved safe in those cases.

The technique consists in preparing the skin area to be treated by the roentgen ray by a series of actinic erythemas produced in rapid succession and repeated until heavy tanning takes place or in case the subject does not tan sufficiently, four or five general ultra violet radiations (not necessarily so severe, but as strong as comfort will allow) being given at the same time for the constitutional effect. When it is decided that the area is prepared sufficient, the last actinic erythema is allowed to fade out and the roentgen ray treatment then given. On the same day but after the roentgen ray treatment, at least as much ultraviolet radiation is applied to the area treated with the roentgen rays as was given to the last previous ultra violet treatment. The general ultra violet exposures are also kept up. The application of the ultra violet rays is repeated in the same or slightly increased dosage over the roentgen treated area about every fifty eight or seventy-two hours, continued by the actinic reaction until that area has had at least three good actinic exposures. Then all actinic erythemas are allowed to die out so that if a actinic erythema appears later it can be detected. In practice, small central areas are covered by the thin actinic treatments and the ultra violet ray applications are applied to all the rest of the area for a period of three weeks the small covered area being used as control for the actinic erythemas.

Several cases are cited in detail in which the treatment described was used with good effect. Many doses of actinic erythemas were given. Most doses of ordinary erythema doses were given without the production of an erythema.

In conclusion the author states that the chief purpose of this clinical research was to point out that ultra violet and roentgen radiations are physiological complements. This may be used in many ways but the other that is the ultra violet rays applied first renders the more resistant to subsequent dosages with the roentgen. The roentgen rays applied first may produce a dermatological damage injurious to the organism but this if it is that injury be alleviated or entirely neutralized by applying ultra violet radiation second and third. The ultra violet rays therefore greatly extend the previous limits of roentgen ray therapy in the treatment of disease. ADOLPH HARTMAN, M.D.

Pendergrass, F. P., Hayman, J. M., J. H. Houser, L. M. and Rambo, V. C. The Effect of Radiation on the Normal Tissues of the Brain and Spinal Cord of Dogs, and its Therapeutic Application. *Am J Roentgenol* 9 12, 551.

The authors describe at some length the experimental work done by others to determine the effect

of radium upon the tissues of the central nervous system. The report also their own experiment upon dogs in which they used both surface applications and implantation and noted the clinical symptoms, gross effects, and microscopic pictures produced by various doses applied to the brain and spinal cord. Consideration is given to the general effects of radium, the manifest toxemia, and finally to certain findings which may throw light on the nature of the general effects observed.

The results of their experiments are summarized as follows:

1. A exposure of the normal brain tissue up to 1,500 mgm hrs is compatible with life (surface application).

2. The result on the cord however could indicate that vitiation of the brain as well as of the cord should never be exposed to surface application or implantation.

3. Microscopic studies indicate that considerable change is to be found with exposures that cause no clinical symptoms.

4. After exposure of 1,000 mgm hrs the brain shows a general swelling throughout the entire radiated hemisphere. This may be ascribed to the production of an edema which is not limited to the radiated part, but extends throughout the entire hemisphere.

5. Radiation of the brain with radium (surface application and implantation) may cause severe general symptoms which indicate that a powerful toxin has been formed from the radiated tissue.

6. The effect of radium is due to its toxic action on first upon the nucleus and cytoplasm of the cell and the resultant death of the cell under conditions forming a toxin. The direction of this

toxicity is determined by the chief component of the radiated cells. If this is protein, the toxic products of proteolysis may exhibit their general effect. If the chief component is lipid compounds, the result is a toxin which may free the toxic components of lecithin and produce their characteristic reactions.

7. The use of radium is recommended for the treatment of brain tumors but should be undertaken only by one who is thoroughly familiar with the dangers that may result from its improper use.

8. The findings of the experiment on dogs are applicable to human beings since it is not the destruction of brain tissue that causes death, but some toxemia. In the application of radium to the treatment of malignant tumors of the brain of man the normal brain tissue should not receive more than 1,500 mgm hrs.

In conclusion the authors state that radium is to be recommended as prophylactic against recurrence following the removal of brain tumor and after sella decompression and is also applied to the treatment of cases of recurrent tumor disturbance following sella decompression. Cases of inoperable tumors it gives good results when implanted into the growth and supplemented by cross-fire radiation through the scalp (external application). When a brain tumor is only partially removed, it should be implanted in the center of the cavity and supplemented by external cross-fire radiation. When

a brain tumor cannot be localized or discovered by operation radium may be used for external cross-fire radiation. The treatment of spinal cord tumors should be restricted to cross-fire radiation by the roentgen ray or radium. In surface application there is great danger of causing paralysis.

Luterman II, Brit Med J

# GYNECOLOGY

## UTERUS

Arnold, C. G. Uterine Prolapse with Associated Pelvic Relaxation. *Kewsch's M J* 92 22, 503

The uterus lies in mobile equilibrium between the bladder and the rectum, the cervix being about in from the union of the second and third sacral vertebrae and the fundus toward the symphysis with its axis at about right angles to the vagina. The ligaments are usually lax and merely limit the range of mobility.

To correct uterine prolapse fix the upper end of the vagina and the cervix in the proper position, hold the fundus forward, and give sufficient perineal support. If a large cystocele is present the interposition operation is best. When there is complete prolapse the vaginal hysterectomy of C. H. Mayo with overlapping of the ligaments beneath the bladder and a high perineorrhaphy is indicated.

R. F. CARRUTH, M. D.

Vogt. The Significance of Aneurysms of the Uterine Artery. As indicated by an Arteriovenous Aneurysm of the Uterine Artery and Vein Due to an Aerial Bomb Injury (Ueber die Bedeutung des Aneurysmus der Uterinarterie nach der Beobachtung eines Aneurysma arteriovenosum der Arteria und Vena uterina infolge einer Bombenverletzung). *Arch f Gynak* 9 1921, 29.

Aneurysm of the pelvic vessels is very rare and no case of aneurysm of the uterine vessels has been reported in the literature. In the thoracic cavity swelling large as a hen egg is palpable to the left of the uterus. Its median portion pulsated synchronously with the heart beat and caused bulging of the anterior abdominal wall. The lateral portion which extended up the pelvis still showed no pulsation. Following compression both portions of the tumor soon refilled. Friction and laceration of the tumor were noted on palpation. Dissection and the same laceration and ligation of the femoral and common iliac arteries up to the aorta. Complication with infection. The tumor was in the region of the uterine compression and reason of displacement (position) of the uterus. The rupture of the aneurysm, the resultant severe hemorrhage, malignant degeneration of the infection and embolism.

Appropriate dose of tetra... The operation which was made... The uterus consisted in the reposition of the left ureter throughout its entire course. Fixation of the uterine artery close to the cervix and the posterior uterine artery. The drainage of the cul-de-sac of Douglas through the vagina. The oentgenogram

of the specimen revealed a fragment of the bomb in the uterus and another in the immediate vicinity of the aneurysm. The latter had particularly sharp edges.

The author states that evidently the bomb fragment entered the pelvis through the greater sciatic foramen. Following adhesion of the vessels injured by its passage the intima grew over the wound, fistulous connection between the artery and vein being thus formed.

In the differential diagnosis of hematomas of the broad ligament, palpable pulsation of the uterine artery in retro-uterine hematocel and cysts of Gartner's ducts with apparent pulsation must be taken into consideration. GRAGERT (2).

Polak, J. O., Mitchell, E. A. and McGrath, A. B. What Is the Relation of Hypertension to Fibroid Disease of the Uterus? *Am J Obst & Gynec* 9 1921, 7.

The authors reach the following conclusions on the basis of 416 cases.

The presence of fibroids of the uterus in young women causes no apparent effect on the blood pressure.

Women with myomata who have a high pressure are usually over 40 years old near the time of the climacteric, or have renal or cardiovascular disease.

3. The bleeding of fibroid seems to be salutary and has no direct effect on the blood pressure, but when it is suddenly checked by operation or radium the pressure rises temporarily.

4. In women 14 years or over the pressure is raised for a varying period following removal of the uterus and ovaries, but unless there is some intercurrent disease it soon returns to the pre-operative level.

5. When the ovary or ovaries are preserved the operative climacteric is less stormy.

6. The pressure and nervous phenomena are more pronounced after radium treatment than after operation. L. L. COLEMAN, M. D.

Von Ottenberg H. The Indication for Total Ablation in Certain Cases of Rupture of the Uterus (Ueber die Indikation zur Totalablation bei Uterusruptur in besonderen Fällen). *Zentralbl f Gynak* 9 1921, 70.

A sextupara in the fifth month of pregnancy noticed discharge of amniotic fluid without external cause. A few days later a mud if introduced her hand to remove the dead child. With the exercise of considerable force he finally delivered the trunk of the fetus. The head and placenta she was unable to find.

At examination at the bouget the external os could be penetrated with finger bouget can above the os on the right side large round cavity as found. The uterus empty the uterine v of a man's fist and soft.

Laparotomy performed at once revealed on the right side near the uterus a tumor like bulging of the broad ligament. The peritoneum intact. Total ablation was done the head of the fetus and the placenta were found between the folds of the broad ligament. Drainage as entered through the girth surface of the omentum covered with peritoneum, and the incision sutured. Death occurred from cardiac embolus four days after the operation. There was no action of the bdominal cavity.

Total ablation of the uterus is indicated not only when there has been rupture of the peritoneum but also when there are irregularities in the broad ligament with severe hemorrhage and expansion of the uterine content. *WOMAN 11 112*

**T. Fisher.** Irradiation and Enucleation of Uterine Fibroids. (*Traitement des fibromes uterins par irradiation et enucleation*) *Bull. (ed. 1) med. Par. 1922* 509.

In this report upon the indications for enucleation (in operation) treatment of uterine fibroids (in enucleation) are more numerous than those for radical treatment. The principal argument for this view is that the very large percentage of the women with fibroids are of the age of gestation and activity and radiation could cause sterility and a large number of fibroids are small. Recurrence following enucleation is more likely than after irradiation and is more likely to recur than after irradiation.

With good technique enucleation is no more dangerous than hysterectomy. Irradiation of the myometrium should be employed only when there is a hysterectomy could be necessary. *W. 11 B*

**Dreke, I.** The End Result of the Surgical Treatment of Carcinoma of the Cervix Uteri. *Lancet* 1922 395.

Alan Wargrosser has been somewhat successful in the use of radium in the treatment of the cervix. In this case the author has followed the author's operation. It is the author's contention that for the present the operation is the most reliable method. The method of choice he thinks is possible to use of it proven effective and because there has not been sufficient evidence that radium will give lasting cure.

The report published in 1920 that five cases of radical hysterectomy in 1918 from the records of the Massachusetts General Hospital the mortality as given as 6 per cent and the five year cure as 57 per cent.

The author reports that additional cases in which radical hysterectomy as done. These cases

were chosen from eight cases of carcinoma of the cervix examined. The operability was therefore 37.6 per cent. Twenty of these cases were operated upon prior to 1917 and twelve since then. The mortality 9.3 per cent. The five year cure averaged 40 per cent.

The radical operation consisted of wide removal of parametrium and liberal cuff of vaginal all in some cases no stage and cauterization were done in 3 previous.

Cases presenting contraindications to operation are those showing infiltration of the rectum or vagina all in some cases no stage and cauterization were done in 3 previous.

The most frequent complication in the cases reported as urinary fistula.

The mortality was high in cases operated upon prior to 1917 as reported in detail.

*J. J. BROWN, M.D.*

**Wells, J. V.** A Study of Adenocarcinoma of the Fundus of the Uterus. *Am. J. Obst. & Gynec.* 1922 24.

This article is based upon study of forty-four cases of adenocarcinoma of the fundus of the uterus operated upon at the Free Hospital for Women in Brookline, Massachusetts since 1903.

The uterus as a gland in many cases but this is not constant finding. The average age of the patient as 50 years but in five patients had had children the average number being three. The average duration of symptoms on average eight months. Therefore if more emphasis were laid upon the significance of irregular bleeding the number of cases in which treatment is successful would be greater.

Judging from the statistics the diagnosis of adenocarcinoma of the fundus is difficult without microscopic study. Atresia of the cervix may be easily confused with it.

Seventy-two and five tenths per cent of the cases studied are without recurrence in five years or more after the operation. Fourteen of the cases recurred but 100 per cent of 93 and thirty per cent of 9 more cases of the cases.

Adenocarcinoma of the fundus is not common tumor in hospital practice. There is only one but forty-four are in 566 operated upon since 1903, but in private practice it is undoubtedly more common. Frequently the carcinoma of the cervix.

Complete hysterectomy (not Wertheim's method) is the most successful treatment. Operation is to be preferred to radium therapy.

Five of the forty-four patients studied had metastatic growths in the adnexa. Therefore bilateral oophorectomy should be performed with the removal of the uterus.

The differential diagnosis from gland hypertrophy is sometimes difficult even with the microscope.

*E. L. COVIELL, M.D.*

## ADnexAL AND PERI UTERINE CONDITIONS

Dorland, W A N A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy: Together with Study of Decidual Reaction, Intra Uterine and Ectopic. *Am J Obst & Gynec* 9 iv 5

The case reported is of interest because

It is the earliest tubal pregnancy recorded the embryo measuring only 1.55 mm. or when the dorsal flexure was straightened 2.8 mm. and showing but 5 somites

The fallopian tube showed no sign of decidual tissue

3 A sharp dorsal flexure in the outline of the embryo closely corresponded to that noted in Wilson's embryo. This is not a natural condition and was produced probably by the contracted position of the ovum in the tube

4 The optic vesicles were in contact with the overlying ectoderm

5 The optic vesicle was shown in very early stage of development E L CORNELL, M D

Donald, A. Adenomyoma of the Rectovaginal Space and Its Association with Ovarian Tumors Containing Tarry Material. *J Obst & Gynec Brit Emp* 9 xii 447

The author has had a series of seven cases of adenomyoma associated with cystic ovarian tumors containing tarry or chocolate material. The tumors were not ordinary varicose tumors with condental hemorrhage but distinct entities. Such growths are nearly always bilateral and very adherent. Frequently they must be dug out of the broad ligament or the side and back of the pelvic cavity. They burrow into the tissues. The lining wall is often quite thick and rather leathery. The author regards these tumors as adenomyomata but states that their exact origin is still unknown

Seven of Donald's patients were between 4 and 47 years of age. Nine were married and one was single. The one symptom which was present in every case was dysmenorrhea. In three cases complaint was made of dyspareunia. In six cases a definite, hard, tender mass was felt through the posterior fornix. In a majority of the cases pain hysterectomy as done H W FINE, M D

Sampson, J A Intrasternal Adenomatous of the Endometrial Type: Their Importance and Their Relation to Ovarian Hematomata of the Endometrial Type (Perforating Hemorrhagic Cysts of the Ovary) *Arch Surg* 9 7

The adenomata of endothelial type occurring in the intestines are similar to those found in the ovary tube, or terum. The parts of the intestines usually involved are the sigmoid, rectum, appendix, and terminal loop of the ileum

The lesions are (1) surface and superficial implantations, (2) implantations developing between adherent folds of the peritoneum and (3) deep invasion of the underlying structures

Often they do not produce any symptoms. In other cases they cause obstruction

The treatment is removal of the ovaries. The intestinal lesions should be removed only when they cause obstruction

The condition is usually found during the latter half of the menstrual life of women, usually after the thirtieth year of age, and occurs in more than half the cases of ovarian adenoma of the endometrial type. The author gives the histories of twelve cases R E CARRUTH, M D

Khaw W F and Addis, W R Adenomyoma of the Rectovaginal Space Associated with Tarry Cysts Arising in Islands of Adenomyomatous Tissue in the Ovary. *J Obst & Gynec Brit Emp* 9 xii 45

The authors report the sixth of a series of cases of adenomyoma of the rectovaginal space associated with tarry cysts of the ovary. That these cysts originate in adenomyomatous tissue in the ovary had been considered for long time. A clinical grounds but it remained for Cullen and Sampson to show microscopically that they contain in their walls islands of endometrial tissue

The case reported was that of a married woman 38 years of age who had had no children. The chief complaint was dysmenorrhea of one year's duration. Examination revealed a firmly fixed irregular tumor apparently arising from the uterus which filled the pelvis and extended up into the abdominal cavity to about four fingerbreadths above the pubes. At operation the growth was found to consist of mass of fibroids in the uterine wall. The right ovary was above the pelvic brim and adherent to the bowel. The left ovary was buried in adhesions obliterating the pouch of Douglas

Removal of the appendages and uterus was extremely difficult. The fibroids formed an irregular globular mass the size of a turnip. The left ovary was the size of a tangerine orange

On section, the ovarian substance was found to be replaced almost entirely by a series of thick walled cysts containing dark chocolate colored fluid of tarry consistency. The left tube was normal. The right ovary which was smaller consisted of a main cyst with contents similar to the material in the left ovary. The right tube was normal. Microscopic examination of tissue taken from the cysts all showed distinctly structures comparable

to adenomyomatous tissue, including smooth muscle and gland spaces lined with cubical endothelium indistinguishable from endometrium

H W FINE, M D

Protetner A. Results of the Surgical Treatment of Long-Standing Tumors of the Adnexa (Heil results der chirurgisch behandelten chronischen Adnexitiden) *Gyn. heb. 9* lxxvi, 5

Operative treatment is justified only in cases in which the tumor has been present for years, has resisted all conservative treatment, and causes

severe symptoms or incapacity for work. In any case operation should not be performed until several months after the disappearance of inflammation.

The operation is usually radical, with total removal of the uterus. A conservative operation is performed only in unilateral (pooperal) cases. In 11 cases operated on radically during the past five years there were five deaths, 1 from peritonitis, two from sepsis and one from embolism. Of the patients who survived, 95 per cent were able to work and 8 per cent were entirely free from symptoms (fifty nine of sixty seven examined subsequently). In twenty-eight cases operated on conservatively there were no deaths, and of the seventeen women subsequently examined, eleven (76 per cent) were cured, three (16 per cent) were better but not entirely well, and two were no better.

The results of the conservative procedure are thus seen to be less favorable than those of the radical operation, even when the cases are carefully selected. The only disadvantage of the radical treatment is that it produces an artificial menopause but the symptoms of this condition are noted chiefly in nervous women and are never so severe as to seriously diminish the good results of the operation.

Pol. (7)

### EXTERNAL GENITALIA

Ligault. The Formation of Artificial Vagina by the Transplantation of Loop of Intestine (Création d'un vagin artificiel par anastomose d'une anse intestinale). *Ann. Chir. 9* 11 413

In 11 cases of bicornis of the vagina Ligault operated successfully by Bald's method, viz the transplantation of a loop of the small intestine. A transverse incision was made, the depression corresponding to the vulva medially, laparotomy then done and loop of the small intestine exteriorized, a distance of about 30 cm from the ileocecal valve. About 5 cm of this loop was then resected and the end of the gut was reanastomosed. The mesentery was included in the resection. The rudimentary uterus and ovaries were removed and the two broad ligaments united and brought down to the perineum. A canal was then hollowed out for the new vagina and the testis loop brought down to the perineum and fixed in place by suturing the mesentery. This having been done the loop opened and sutured to the remnant of the vaginal mucosa.

A satisfactory result was obtained. In both cases there was no secretion of mucus from the transplanted loop. W. A. Barr

Garnier, U. A New Method for the Radical Treatment of Congenital Vaginal Anoma (Nouveau procédé de traitement chirurgical de l'anomalie congénitale). *Ann. Chir. 9* 473

A rectal outlet in the female genital tract is either rare congenital deformity and the occurrence of the outlet in the vagina is particularly rare.

The usual method of treating both vulvo-rectal and vulvo-rectal fistula consists in dissecting the rectum and fixing it to a new anus. When the rectal outlet is situated deep in the vagina however this operation is extremely difficult.

In a case operated upon by the author that of a child 3 years old, the rectal aperture in the vagina had destroyed a part of the posterior vaginal wall and caused marked vaginal stenosis. As the ordinary operative methods were not applicable, Garnier decided to perform a plastic operation on the posterior wall. An disc anus was first formed. When this was functioning well, a posterior median incision was made extending from the middle part of the sacrum to the ischiatric line, and the rectum isolated and resected. The lower extremity of the rectum was then easily found in the posterior vagina. There was no muscle structure corresponding to an external sphincter but the levator ani was inserted at the head of the rectal cul-de-sac. The rectal communication with the vagina was explored through a longitudinal cut in the intestine and the rectum then cut away passed through the fœces of the levator ani to the sacroperineal incision, and sutured to the skin.

There was some postoperative perineal sepsis but the new anus was satisfactorily formed by the fourth day and evacuations occurred daily. W. A. Barr

### MISCELLANEOUS

Bird, F. D. Note on Form of Pelvic Hydatid Cyst and Its Treatment. *Med. J. 4* Dublin, 10 2, 710

The author reports his treatment of three cases of pelvic echinococcus by evacuating the prostatic through suprapubic incision the cyst cavity as emptied by means of an aspirator, gently irrigated, and drained. The after treatment consisted of relieving the pain and keeping the drain tube open until its removal. C. H. Davis, M.D.

Young, J. V. Intermittent Aspiratory Hyperemia. I. Gynecology. *Am. J. Obst. & Gynec.* 9 30

When the lesion to be treated is an infection of the cervical glands alone the instrument described by the author may be used as suction pump only but in most cases there is ascending lymphangitis with peritonitis, respiratory stimulation is of great importance.

In circulatory cases due to subperitoneal malposition, or both aspiratory stimulation is of the greatest value. A method of cleansing the cervix and preparing it for topical applications is almost serviceable. When the infected glands have become cystic they may be punctured and pumped empty and the cavity filled with blood clot.

Of 73 cases (76 those of allipara and those of multipara) 97 were cured, forty seven are benefited, and twenty four not benefited.

There can be no doubt that cervical infection is much more frequent and much more important as a focal infection and point of entry that is generally believed.

Intermittent aspiratory hyperæmia is a method by which infected cervical glands may be drained and a temporary hyperæmia induced to eliminate the infection. Hyperæmia will also stimulate the uterine muscle to rhythmical contraction, thereby improving the uterine tone and relieving circulatory stasis and inflammatory conditions.

E. L. CORNELL, M.D.

Albertin. The "Douglas Cry" in Women (Le "cry du Douglas" chez la femme). *Lyon chirurgical* 9, xiv, 470.

Nearly twenty years, when carrying out a laparotomy on a woman, Albertin observed that when the fundus of the Douglas cul de sac was wiped a pharyngolaryngeal reflex caused the patient to utter a sharp and prolonged cry. On repetition, the manoeuvre always gave the same result. Albertin calls the sound the Douglas cry. He has found that great many other surgeons have observed the same phenomenon. Albertin now reports it as recently he has tried the work of Latarjet on the innervation of the uterus which shows that the Douglas sac has a rich supply of sympathetic nerve filaments. He states that many of the acute vaginal pains of which women complain after a colpotomy or hysterectomy and the pressure pain in the Douglas region are explained by very great sensitiveness of the Douglas sac. The presence of such sensitiveness is very suggestive of ovarian degeneracy.

In discussing Albertin's paper Turner said that the Douglas cry can be produced also in men. It has caused it by prostatic dilatation even under deep anesthesia. The cry is a danger signal. Cases are known of asphyxia and even fatal anesthetic syncope in ectal dilatation, and it is possible that there is some relationship between the Douglas sac reflex and this serious complication.

W. A. BRYAN.

Nagelsbach. Malignant Chorionic Epithelioma with Hemorrhage into the Abdominal Cavity (Malignes Chorionepitheliom mit Verblutung in die Bauchhöhle). *München med. Wochenschr.* 9, 5, 1075.

The author reports the case of a woman who suddenly collapsed with symptoms pointing to tubal rupture. A year previously she had been cured on account of a miscarriage.

Immediate laparotomy revealed, in addition to a large quantity of free blood in the abdominal cavity, somewhat enlarged uterus with a small area of bloody tissue without serous covering on its anterior wall. Supravaginal amputation of the uterus was done. Death occurred a few hours later in spite of the transfusion of blood and the usual restorative methods.

This was a case of intramural chorionic epithelioma which originated in the pregnancy of the previous year and caused perforation. DROGON (Z).

Macomber D. The Etiology of Sterility in the Female, from an Analysis of 500 Case Records. *Boston M. & S. J.* 9, cxxxvii, 307.

As many of the 500 records were incomplete and in many of the cases the sterility was due to the male, this article is based on the findings in 337 cases. The conditions responsible are given as follows:

#### PATHOLOGIC CLASSIFICATION OF FEMALE STERILITY

	Per cent
Closed tubes	9
Tuberculous tubes	4
Endometriosis	5
Endometritis	—
Total cases due to inflammation	30
Retroversion	—
Fibroids and miscellaneous	8
Simple congestion	—
Total cases due to congestion	3
Anteflexion	9
Double uterus, et	—
Infantile uterus	—
Total cases due to developmental errors	24
Asthenia and ovaries	8
Retroversion and ovaries	—
Ovaries alone	8
Age, diet, menopause	—
Total cases due to ovarian conditions	3

Sterility may be due to either the male or the female, the incidence of the condition being the same in both sexes. When the female is responsible the chances are about even that the cause is pathologic on the one hand or developmental or functional on the other. About one fourth of the women studied had closed tubes or some other inflammatory condition. One fourth the sterility was due to congestion. In another fourth the cause was essentially developmental, and in another failure of ovulation. In sterility due primarily to disturbances of function the treatment of pathologic lesions alone will seldom be successful.

E. L. CORNELL, M.D.

Pomeroy L. A., and Milward, F. W. A Case of Primary Carcinoma of the Female Urethra Treated with Radium. *Surg. Gynec. & Obst.* 9, 2, xxxv 355.

The authors report this case because of the great rarity of the condition. The fact is emphasized that a caruncle had been present for several years before the development of the malignancy. At the time of examination a large foul ulcerating mass was found filling the entire introitus and extending about 3 cm. up and along the posterior wall of the urethra. The patient still retained urethral control. A tentative clinical diagnosis of primary carcinoma of the urethra was made and a small section of tissue removed for pathologic examination. The pathol-



ologist's diagnosis: a probable carcinoma which had undergone circumscribed proliferation.

Although no definite evidence of lymphatic involvement could be made out it was thought best, because of the patient's advanced age and the extent of the lesion, to apply radium rather than to risk the shock of more or less extensive operation. Five steel needles each containing 1 mgm. of radium element were inserted directly into the tumor at about equal distances from each other and allowed to remain in position for forty-eight hours. In addition, one tube containing 30 mgm. of radium element screened with 5 mm. of silver or 1 mm. of brass and 1 mm. of hard rubber was inserted into the urethral canal and allowed to remain for four hours. The total radium treatment therefore equaled 800 mgm. hrs.

The patient had only the usual postoperative and radium nausea and ten days after the treatment was up and about without any unusual symptoms. Twelve days after the treatment she had suffered no hemorrhages or other symptoms and union had

showed that the mass was one third less in size and much cleaner and that the discharge was considerably reduced.

The authors' conclusions are summarized as follows:

1. Primary carcinoma of the female urethra is rare disease; only sixty-eight cases have been reported in the literature.

2. Urethral carcinoma, a relatively common affection in women, may be followed by malignant degeneration; hence the importance of its early recognition and treatment.

3. Urethral cancer should be recognized early and given rigorous treatment.

4. In the early cases the treatment should consist of radical extirpation. If enucleation of the bladder may be indicated but this is rarely necessary. In most cases the external sphincter can be saved in the operative procedure.

5. Radium should be used after all operations, and in advanced cases may be employed alone.

ANDREW H. KROENKE, M.D.

# GENITO URINARY SURGERY

## ADRENAL, KIDNEY AND URETER

Braunsch, W. F., and Scholl, A. J. Jr. Pathological Complications with Duplication of the Renal Pelvis and Ureter (Double Kidney) *Surg. Gynec. & Obst.* 9: 225-4

A review of the records of 144 patients observed at the May Clinic since 1907 in whom duplication of the pelvis and ureter was found revealed that 35 (24 percent) had unilateral duplication and 109 (76 per cent) had bilateral duplication. In forty-four cases the duplication was complete in 100 cases, incomplete.

There is usually a difference in the size of the pelvis of double kidney; the upper pelvis being the smaller. In spite of this, the function of the segments is usually equal. Microscopically the tissue between the segments is demonstrated to be a complete histologic unity. In some cases the capsule dips into the renal mass making definite partial division. In the specimens examined glomeruli and renal tubules were almost always found in the parenchyma between the segments.

The diagnosis of complete duplication is comparatively easy by cystoscopic examination. In incomplete duplication, however, the condition is discovered only by means of a routine pyeloureterogram. The cystoscopist should always be on the look out for the third opening. While three ureters are present the usual method of catheterization by removing the cystoscope and re-introducing it is awkward and painful. The authors have devised a three-way catheterizing guide which overcomes this. It is difficult to estimate the definite function of each of the segments particularly if no is diseased. Unless good function can be demonstrated in one segment a heminephrectomy is out of the question. Pyelography is of value in determining the distance separating the pelvis as well as the pathologic condition present. The distinction between the small pelvis of trophic pyelonephritis and the upper pelvis seen in duplication may be difficult because of pathologic complications.

The series of 44 patients are divided into four groups: (1) thirty patients in whom pathologic complications have operated on; (2) ten patients in whom definite pathologic complications were found but on whom operation was not performed; (3) twenty-nine patients in whom there was doubtful evidence of pathologic lesion; and (4) sixty-one (4 per cent) patients in whom the diagnosis was purely accidental and no complications were noted.

The most common lesion calling for surgical treatment was hydronephrosis caused by stricture of the ureter. Of the 44 double kidney removed for

tuberculosis the disease primarily involved and was largely confined to the lower segment in five. Stricture in the ureter in these cases is often situated at the point of ureteral division.

Surgical treatment was carried out in thirty cases: nephrectomy in fifteen, heminephrectomy (two patients required complete nephrectomy later) in four, pyelolithotomy six, ureterolithotomy in three, cutting of anomalous blood vessels to relieve bydrophrosis in one and ligation of an aberrant (upper) ureter which opened in the vagina one.

In most instances the pathologic complications other than hydronephrosis with double kidney require nephrectomy. Complete nephrectomy was subsequently performed in two of four cases of heminephrectomy because of infection in the remaining portion of the kidney. Unless the lesion is confined entirely to one segment and the clinical evidence shows definite that the remaining segment is normal, the sufficient function to warrant the procedure, heminephrectomy should not be attempted. Even under such favorable circumstances the infection may invade the remaining segment, necessitating secondary nephrectomy.

Runeberg, B. Hematogenous Acute Infections: Nephritis and Pyelonephritis (Nephritis, Nephroses, Nephroses, Nephroses and Pyelonephritis). *Acta Surg. Scand.* 92: 1-18

Runeberg reports 50 cases of infection of the urinary tract. At least 50 per cent of the entire cases observed in his clinic are cases of nephritis or pyelonephritis. The infection occurs through the blood and is often a long time diagnosed as appendicitis or cholecystitis. In order to determine the pathogenesis of these conditions Runeberg made a histologic examination of the number of kidneys obtained at nephrectomy or autopsy. He distinguishes two essentially different types of cases.

Group I: Focal glomerulitis. In this condition there is slight epithelial degeneration especially in the convoluted tubules. Multiple foci in the papillary zones and inflammatory areas in the wall of the pelvis and along the renal vessels. The bacteria are each the kidney by way of the blood stream and are then eliminated through the glomeruli produce inflammation. When retained in the canals they form foci of infection. When they spread to the pelvis and cause pyelitis. The pyelitis produces by the lymphatic route disseminated nephritis characterized by interstitial inflammatory abscesses. Runeberg calls these conditions luminal nephritis, the pyelitis and secondary pyelonephritis.

Group II: Purulent foci irregularly disseminated in the cortical and medullary substance. Important lesions in the kidney or pelvis are rare. The

bacterial emboli become fixed in the ramifications of the renal vessels, giving rise to abscesses outside the circulatory system of the kidney which by continuation, may cause local or extra renal purulent processes. Koberg calls this condition aposthetic molar nephritis metamorphosing by the formation of embol.

In the majority of the cases the infection is due to the bacillus coli or a staphylococcus. A hematogenous colon bacillus infection is always an elimination nephritis. Nephritis pyelitis, and pyelonephritis due to the colon bacillus are only more or less concentrated phases of the same process. The early stage is characterized by fever, light urinary symptoms, andague lumbago. The urine contains large quantity of albumin, and blood is often detected with bacteria in the sediment. When the stage of pyelitis is reached the principal symptom is sharp renal pain and tenderness.

Staphylococcal infections frequently cause local metastatic purulent nephritis by the formation of emboli. The foci are often outside the secretory parts of the kidney. The urine contains white and red cells and bacteria, but no trace of albumin.

Elimination nephritis due to staphylococcal infection resembles colon bacillus nephritis but also differs from it in several points. It occurs more frequently in men than in women. The nephritis period is often short, the condition then usually ending in pyelitis. In nephritis due to the colon bacillus the primary pyelonephritis is often longer than in the staphylococcal infections and the pyelonephritis crises are not so frequent.

The majority of cases of acute infectious hematogenous nephritis and pyelonephritis can be quickly cured by correct treatment. Operative intervention is not necessary during the acute period unless there is danger of anuria or septicaemia. Koberg strongly advocates the use of urethral retention sound especially in suppurative pyelonephritis with symptoms of retention. In chronic unilateral pyelonephritis and pyelonephrosis nephrectomy is indicated. W. A. LITZGAV.

Myer, J. M. and Smith, A. L. The Diagnosis and Treatment of Pyelitis. *Kidney Stab. M. J.* 9, 2, 19.

The symptoms and signs of pyelitis and its causes are factors are protein and may simulate those of practically any organ in the abdomen. The pain is often erroneous diagnosis re pyelitis, abnormal conditions of the female organ, the biliary apparatus or the duodenum and stomach and postoperative adhesions.

The common causes of pyelitis are (1) remote infections (2) constipation, (3) ureteral calculus (4) pelvic calculus, (5) infection and associated abnormalities lower in the genito-urinary tract, (6) ureteral angulations, (7) ureteral strictures, (8) nephropathy, and (9) neoplasms of the kidney.

The common complications are (1) hydro-nephrosis (2) pyonephrosis (3) pyelonephritis (4)

perinephritic abscess (5) destruction of kidney tissue (6) hydro-nephrosis and (7) cystitis.

Any bacterium may be the active cause of the infection. The bacillus coli communis is the prevailing organism in a large percentage of cases.

The diagnosis of pyelitis rests upon the physical and cystoscopic findings. The examination should consist of (1) the history and complete physical examination (2) an x-ray examination of the abdomen and (3) cystoscopic examination and ureteral catheterization.

The treatment giving the best results consists of

1. Eradication of all infections however remote.

Regulation of the bowels.

3. Treatment of local associated pathologic conditions.

4. The administration by mouth of large amounts of water and the changing of the reaction of the urine every ten days.

5. Catheterization and drainage of the pelvis of the kidney followed by irrigation with boric acid solution and the injection of penicillin or streptomycin one or three times a week.

The authors report three cases that illustrate the value of the methods mentioned.

Case 1. That of a woman 55 years of age who had an appendectomy four years ago for pain and rigidity in the right lower abdomen. The pain had continued intermittently and the patient had been advised that an operation for adhesions was necessary.

Examination of the right kidney revealed pyelitis, calculus in the pelvis and lowered function.

The true cause of the abdominal pain was stone in the pelvis and later another in the ureter. Following the correction of these abnormalities the pain ceased.

Case 2. That of a woman 43 years of age. Pain had been present in the left side of the abdomen for the past 6 years in spite of five abdominal operations during this period. A surgeon finally decided to remove the left kidney because roentgenologist reported it much enlarged.

The examination made by the authors revealed perfectly normal left kidney but pyonephrotic right kidney. The right ureter showed stricture and an angulation. The function of the right kidney was practically nil. This case shows that pain, tenderness and enlargement are not unusual in normal kidney which must double its excretory function.

Case 3. As that of a woman 33 years of age who complained of pain in upper part of the abdomen on the right side, shortness of breath and sharp pain in the heart region. A diagnosis of gall stones had been made by surgeon and operation advised.

A general examination revealed peridental infection and myoeiditis. The urine from the right kidney contained large number of pus cells, trace of albumin, and colon bacilli. The capacity of the pelvis was increased to 35 cc. The normal rhythm of the ureteral flow was absent and function reduced to one third normal. Pyelography showed greatly

dilated pelvis with partial destruction of the secondary calices. A diagnosis of first degree pyonephrosis was made. The offending tooth was extracted, the patient kept in bed until the heart function was normal and the kidney condition treated as outlined.

THEODORE DRONOWITZ, M.D.

Kreutzmann, H. A. R. Studies in Ureteral Catheterization. Preliminary Report. *California State J. M.* 9, 12, 3.

This study was undertaken by the author as an attempt to determine whether or not the present disadvantages of ureteral catheterization could be overcome by inserting the catheters only part way into the ureters.

The patient was subjected to catheterization three times at intervals of one week. At the first sitting they were inserted 5 cm into the ureters, the second time 4 cm and the third time the full distance into the kidney pelvis. After the insertion of the catheters 5 cc of phenobalphonephthalein solution was injected intravenously with Record syringe.

The conclusions drawn are as follows:

In ureteral catheterization the occurrence of pain, hematuria, and anemia increases in direct ratio to the distance the catheters are inserted.

Catheterization as at present performed has frequently depressing action on the kidney function.

Accurate information as to relative kidney function cannot be obtained if the catheters are inserted only a few centimeters into the ureters.

The only constriction of importance in ureteral catheterization is at the junction of the ureter and the bladder.

The passage of medium sized catheter causes passive dilatation of the ureterovesical sphincter which lasts at least one week.

Repeated catheterization causes still greater dilatation of the sphincter with further increase in the amount of leakage. LOUIS GROSS, M.D.

# BLADDER, URETHRA, AND PENIS

Geljanitski, J. A New Procedure for the Formation of Sphincter for the Bladder. (*Ein neues Verfahren zur Sphinkterbildung der Harnblase*). *Ven. Chir. Arch.* 9, 33.

A man 5 years of age with total paraplegia due to a gunshot injury recovered his ability to walk after six months but the incontinence of feces and urine persisted. Two years after the injury he was admitted to the hospital. The deep decubital ulcers caused by the urine. The bullet which the roentgenogram showed to the left side of the fourth lumbar vertebra, as noted and laminectomy here upon the following operation was performed.

In the lithotomy position median incision 10 cm long was made from the scrotal inversion to the anus through skin and peroneura, and the musculature of the pelvic floor was split transversely and bluntly

dissected further. The bulb was displaced upward, the anus downward and the membranous part of the urethra was isolated and a ligature was carried around it. By means of this suture strip 1 cm long was taken from the fasciculus lata and moved under the urethra, over which the ends were crossed and fastened with interrupted sutures to two strands of muscle obtained from muscles inserted into the tuberculus (adductor muscle and biceps). Figure of eight sutures and retention catheter were then inserted.

General sedation was pooled daily at the end of three weeks. Two weeks later the patient reported that by putting his thigh muscles under tension in the standing position he could retain his urine for one hour or longer. After two and on half months the function became better and the patient desired similar operation at the rectum.

The author has devised a suitable plan of operation based on the belief that muscle plastic on the gluteus maximus muscle will act mechanically and also innervate the external sphincter.

O. DEB. OSTER, SACRAMENTO (2)

Scholl, A. J. and Brunsch, W. F. Pre-Operative Treatment of Malignant Tumors of the Bladder by Radium. *Arch. Surg.* 9, 2, 334.

Certain types of tumors of the bladder respond readily to radium, while others offer an extremely poor prognosis. Because of the difficulty of completely eradicating the tumor and its frequent cellular transplants, recurrence is early and extensive. This is particularly true of the solid, meaty epitheliomata which commonly occur in the base of the bladder. Small infiltrating wedges of actively malignant cells which project down through the muscle bundles are often cut across between portions of the bladder is excised. The undisturbed clumps of cells which remain in the normal tissue act as foci, spread rapidly and externally and often soon attain an inoperable size.

Epithelial tumors of the bladder rarely metastasize persons who die from malignancy of the bladder usually succumb because of the local condition. Any procedure which would be effectively eliminating the local condition would in many cases effect a cure.

Recently the flat infiltrating tumors have been treated with radium emanations prior to operation. Small amounts of radium are used with the idea, not of completely destroying the growth, but of diminishing the capacity of the cells to proliferate. This is done to inhibit early recurrences from segments that removed and to prevent reimplantation of cells freed during the excision of the tumor.

Under sacral anesthesia the direct cystoscope is passed, the distal opening of the instrument placed on the tumor and the cystoscope detached. This allows the water free exit and the contraction of the bladder firmly implants the tumor against the open end of the instrument and holds it in place until the point of the radium needle can be inserted and the tube drawn into the growth. The bladder is then filled with water and a second area of the tumor

located. This procedure is repeated until the bases of radium emanation have been reached throughout the growth about one to every square centimeter of tumor tissue.

Specimens removed from the tumor before radiation are later compared with the tumor removed at operation.

The most striking feature of radiated tumors is an extreme fibrosis which produces an extensive walling off, replacement and destruction of the tumor cell.

In some cases the radium rays undoubtedly destroyed the proliferating powers of the cells completely, but in a number of tumors nests of apparently intact malignant cells were found. These cells generally killed off by extreme fibrosis, were apparently quiescent at the time of operation as a result of the exposure to the radium rays.

The insertion of tubes of radium emanation is a very simple procedure which may be done at the time of the first examination. The small amount of radium rays is slowly discharged and very little reaction is produced. Most tumors of the bladder are superficially placed, thrombosis of the blood vessels develops early and consequently the absorption of necrotic or toxic substances is light.

During the period between the insertion of the radium emanations and the operation a daily leech drainage is given which not only removes any necrotic slough but also reduces infection of the bladder which is often present.

Emanation tubes are not satisfactory in malignant papillomata as the loose structure of these tumors does not hold the tubes in place long enough for them to be effective. In the majority of cases in which the emanation tubes have been used the patient has been of advanced age and have had wide spread, highly malignant growths requiring extensive operation.

Lower W. E. The End Results of Operations for Cancer of the Bladder (see Surg. g. 123)  
35

Some surgeons believe that all bladder tumors are potentially malignant while others base the diagnosis entirely upon the histologic findings. The methods of classification also vary. Burger classification has been widely accepted.

Geraghty in 1906 classified bladder tumors from the therapeutic standpoint. Judd and Harrington divide them into 3 classes, one consisting of those which can be treated satisfactorily by endocervical methods, and the other those requiring operation. According to White and McHorney there are two types of tumor those amenable to destruction by the high frequency current and those which must be dealt with by radical operation.

As it is often impossible to determine the type of the growth from the frozen section at the time of operation, the author believes that the cystoscopic examination which shows the tumor to be pediculated or sessile, encrusted or sloughing, single or

multiple is about as dependable as any method of diagnosis.

Three cardinal symptoms of bladder tumor are hematuria, pain, and frequency of urination. Burger stated that malignancy is indicated by (1) radiation noted on rectal, vaginal, or cystoscopic examination (2) sloughing (3) lack of reaction to fulguration (Brazier states that if a tumor does not respond to three or four treatments with the high-frequency current it may be considered malignant, (4) the age of the patient; and (5) the number and size of the tumors (so called benign tumors are apt to be multiple).

The operability of a tumor depends on the length of time that has elapsed between the first symptoms and the operation. In 115 cases cited by Lynch the symptoms had been present for from one to four years in 70 per cent and from three to four years in 40 per cent. In 75 cases reported by Caulh the average duration of symptoms was ten years while in 45 cases reviewed by Judd it was twenty-six months, and in sixty-two cases cited by Thoma it varied from six weeks to twenty-five years. Tardy recognition is not due to absence of symptoms but to lack of appreciation of their significance. Blood in the urine is always pathologic.

Lower reports deal only with the surgical treatment, that is, excision or removal, with the actual cancer. Lower still believes that carcinoma is a local disease that rational treatment consists in complete and radical excision of the involved area, and that the condition remains local for a long period and does not metastasize readily. In 1905 Gardner stated that the transurethral method or subtotal cystectomy gave the best results. Lower feels that a freer dissection of the bladder from the peritoneum, freeing off of the surrounding area, better protection of the tissues and when possible clamping around the tumor before the bladder is opened and cutting on the bladder side of the clamp is an efficient method of preventing contamination and the transplantation of cancer cells.

The tendency of all malignant bladder tumors to recur makes every method of removal as used, has long been recognized. Constant vigilance is therefore necessary. The patient should be told to return for cystoscopic examination twice at intervals of three months, three times at intervals of six months, and three times at intervals of one year thus covering a period of five years. The absence of recurrence after five years seems to indicate cure.

With regard to end results, the author quotes Gardner, Thoma, Geraghty, and Scholl whose reports are based on a total of 241 cases. If then given the results in 108 cases of his own, bringing the total number to 350. The study of these reports leads to the following conclusions:

A large percentage of malignant tumors are of papillary origin and therefore not referred to the surgeon until late.

The percentage of recurrence is high whether excision or cauterization is done.

3 Recurrence is not a contra indication to treat ment as some of the best results have come from operation for recurrences.

4 Continued observation after operation is essential as the mortality of carcinoma of the bladder is to be reduced.

5 The good results of the treatment of recurrences are due to the fact that recurrences are nearly all local and very seldom metastasize.

JOHN P. O'NEIL, M.D.

Fromstein R. Gunshot Injuries of the Urethra and Their Treatment (Schussverletzungen des Harnrohrs und ihre Behandlung). *V. j. Chir. Arch.* 19 24, 9.

At the beginning of the war adequate guiding principles for the treatment of injuries of the urethra are lacking because in civil practice injuries of the pendulous portion are very rare and injuries of the perineal portion are seen rather as complications of extensive wounds of the soft parts, rectal lesions, etc. In war the reverse is true. Isolated injuries of the penis being common and the break in the continuity of the urethra more important than the perforation of the surrounding tissues.

Fromstein reports 5 cases. The pendulous portion of the urethra was affected in forty 6 and the scrotal or perineal portion in 7. Among the latter there were fourteen cases of isolated injury of the urethra.

Surgery is characteristic of an injury of the urethra; this either cannot be relieved at all or is relieved immediately. The prognosis depends upon its presence or absence and the condition of the para-urethral tissues. When sufficient time elapses between the injury and the first micturition (five to seven hours) fistulous canal forms without urinary infiltration and the subsequent construction is correspondingly slight.

Patients admitted to the hospital before the first emptying of urine should not be tested functionally even when injury of the urethra is suspected but should be taken under treatment directly with periodic catheterization preferably with silk catheter having a Mercor bend. If rupture of the urethra is demonstrated and the patient has not yet urinated, treatment must be directed to securing regular emptying of the bladder, the prevention of urinary infection and stricture and the hastening of the healing of the wound. The first two objects are accomplished most easily with retention catheter. This should be changed as seldom as possible because if its re-introduction meets with an obstruction the formation of proximal fistula retrograde catheterization and urethrotomy will be necessary. The author denies that the retention catheter favors the formation of strictures.

If a ragged urethral wound is not primarily resected or the sutured wound does not heal by primary intention, stenoses are unavoidable. On the other hand the retention catheter hinders spontaneous closure of the fistulous tract and should

therefore be removed as soon as possible—that is as soon as the wound of the soft parts begins to cicatrize and the danger of urinary infiltration appears to be passed. If then the fistula does not heal spontaneously it must be excised. As failure to heal is usually due to the presence of a foreign body such as a silk ligature, the author uses catgut even in plastic operations, employing silk only for skin sutures. To cover defects he uses non-pedicated flaps of fascia lata and the inner fold of the prepuce. Even with very large flaps, however, he was unable to prevent stricture formation. He considers the mobilization of the urethral tube more important and when the defect was not too large got along without transplantation. After completion of the work of sutures the catheter should be removed. When the mucosa was not included in the suture and erections were prevented, healing resulted even without central diversion of the urine.

In the treatment of strictures the author met with several unfavorable conditions. Whereas traumatic fistula could be prevented in one way or another or cured, this was not true of strictures. Preventive operations, consisting of excision of the crushed edges and primary suture, are justifiable but in practice conditions are such that a certain amount of stenosis is unavoidable. Therefore if the cicatricial tissue is slight in amount and soft, and if the use of bougie has not been necessary for two or three years, the patient may be considered cured. The treatment of stricture should be operative, provided the careful use of bougie in conjunction with hot baths or saltpeter baths has been ineffective. The results depend not so much upon the operative procedure as upon the nature of the injury. The author classifies injuries into five classes with an increasingly poor prognosis: (1) tangential transverse injuries of the urethral wall; (2) ruptures of the urethra; (3) longitudinal tears; (4) more extensive damment of the urethra and its surroundings; (5) injuries in the sphincteric portion.

In cases of the first class, spike-shaped cicatrix forms and can be easily removed by double internal urethrotomy. In those of the second class there is ring-shaped or cylindrical rigid stenosis and according to the circumference of the stricture urethrotomy or resection is indicated. Cases of the third class should be treated with external urethrotomy, excision of the scar and suture. The author obtained a cure in 60 to 65 per cent of cases without the use of retention catheter by beginning with the use of bougies ten to eleven days after the operation. For cases of the fourth class he advises radical methods. He has had no failures when after the resection the cut edges of the urethra were sutured and the urine diverted. If primary nitre was impossible because the chiasma was too great it was nevertheless possible to hold the unobscured cicatricial recurrences within moderate limits after the resection and to achieve good result by the use of

bougies and anastomosis. The fifth class of cases are usually complicated by injuries of the rectum and the pelvic bones. 1. on after the incidence of the symptom, extensive structural deformities remain which in conjunction with the loss of the anastomosis of the prostatic portion often present insurmountable difficulties. The author is compelled to describe three patients with suprapubic bladder fistula of which he states that in other cases he will be obliged to amputate the rectum at the rectum.

### GENITAL ORGANS

Chewin, W. The Operation of Low ring into the Scrotum the Testicle Retained in the Inguinal Canal (// Operation der Heralabkrone des m. Inguinalkanal erkrankten Hodens la den Yngren)  
Meds f. 0 10

The author establishes the principle that the testis must not be removed for cryptorchidism because although the spermogenic testis is usually atrophied, the secondary gland is not.

I regard it the proper go for operation he states that the test frequently sink down the scrotum spontaneous and therefore the operation should not be done too early. If the test has been displaced into the upper part of the scrotum it needs no additional fixation it usually sink down spontaneous and normal development is only hindered by traction.

Case 32 has performed the operation 1 times on ten patients. Light of the case, it been under observation for period ranging from six months to five years. The result good in two cases, satisfactory in three, and poor in three. All of the patients are over 9 years of age. I nurse cases the spermatocoele ext. ch mobilized and then complete mobilization as not terminated.

In the author's opinion, it is mobilization of the spermatic cord is the most important part of the operation. Not only should the deferens and blood vessel be mobilized most reflex along the course of the entire inguinal canal, but the portion of the spermatic cord lying in the pelvis should also be freed. The firm connective tissue bands

which often fix the spermatic cord to the pelvic wall, they should be divided with the scissors. From the peritoneum the canal can be separated more easily, though the blood vessels interfere with the lowering of the testis to great extent as they must never be divided. The loosening of the blood vessels in the pelvis is accomplished easily, but is less mobilizing than the separation of the canal. Experiments on cadavers show that mobilization of the pelvic parts of the spermatic cord causes an average lengthening of about 5 cm. As there is no reason for fixing the testis in the lower portion of the scrotum, it need be fixed only in the simplest manner and in children no fixation at all is necessary. In 9 per cent of the cases the in-

indication for operation is usually the presence of a hernia or cyst. The author was unable to determine any enlargement of the trophic testis after the operation.

Reitterer J. and Vorwies H. The Local and General Effect of Retention of the Deferred Casts (L'effet local et général de la rétention des canaux déferés) *J. d'and nat. et de*

Numerous experiments have demonstrated that after ligation or resection of the different canals pre-existing libido and potentials coexist persist. The authors' earlier experimental lithigastros are not satisfactory often the continuity of the canals is not interrupted completely. In the experiments reported in this article 6 to 8 cm of the different canal of dogs are resected and the morphological and structural changes caused in the testicular tissues by the resection were compared with the findings of histological study of the testes of normal and how different canals had not been resected.

The authors deal especially with the symmetrical lining of the membranous tubules. In an old dog this lining is composed of a common cytoplasm traversed by an organized filamentous constituting wide meshed reticulum. When the dentinal canal had been resected for 1 year the filaments are found to be more abundant and the reticulation lower.

The important fact demonstrated by the experiments is that contrary to the theory generally accepted since the findings of Noel and Baum in 1919, gonadotropin has no hypertrophic effect on the interstitial cells of the testis. It does not increase the sexual desire and not the sexual activity, but merely accelerates the maturation of the interstitial cells.

After resection, these nuclei elements of the testis, which had entered their full development at the time of resection, show some degeneration, but those which are in the early stages of development continue to develop. Spermatogenesis continues to mature in the absence of sperm excretion. The cytoplasm, however, is denser and does not liquify to form nuclei. Such the spermatozoa can be seen. The development is slow and the occurrence of the cellular line remains here they are produced. Serial cell continues to accepted notions are not found in the testis after resection of the deferent canal.

The authors opinion promoters observers are too ready to conclude that the seminal layer of cells in the seminiferous tubules degenerate and atrophied. If they had studied or examined the apparently increased Sertoli cells after a period of eight to twelve months they could have found that they had survived to the layer of seminal cells.

W. A. BERNARD

Rankin, F. W. and Jodd, E. S. Emphysema of the Scrotum the Result of Diverticulitis of the Sigmoid with Perforation. *Surg. Gynec. & Obst.* 9: 337, 5.

The patient was a man 46 years of age who registered at the Mayo Clinic November 19, 1919, complaining of pain and soreness in the left lower abdominal quadrant. At first this pain was sharp and shooting and confined to the lower part of the abdomen on the left side but later it radiated into the perineum and across the entire lower part of the abdomen. The patient was nauseated but did not vomit. His temperature was 100 degrees F. There was no blood in the stools and no diarrhea or constipation. The attacks occurred intermittently for three years, increasing in severity and frequency. Ten grains of morphine daily were required for relief. Six weeks before examination marked frequency of urination with burning began although no blood or gravel was found in the urine. On two occasions gas was passed from the urethra.

The physical examination was negative. The urine showed albumin, erythrocytes and pus. Combined phenolsulphophthalein test was 5 per cent, and there was 1/4 oz. of residual urine. The leukocytes numbered 7,300 and the erythrocytes 4,550,000. The hemoglobin equaled 74 per cent. The roentgenological diagnosis was obstruction in the sigmoid flexure. On digital examination of the rectum an obstruction was met principally on the right side about 9 cm. from the anal orifice. A tentative diagnosis was made of diverticulitis of the sigmoid attached to the bladder causing a secondary cystitis and an intermittent fistula.

Operation November 9, 1919 revealed a mass about 9 cm. in diameter deep in the pelvis and attached to the left wall of the bladder. This was identified as the sigmoid with much inflammatory

tissue about it. Multiple diverticula of the sigmoid could be demonstrated above the growth. A loop of ileum adherent in the mass was not removed for fear of perforation. The colon above was greatly distended with gas. Resection of the entire mass seemed too formidable an operation to be performed in this stage therefore a preliminary colostomy was done.

The immediate convalescence was uneventful. The colostomy had not been opened. On the eighth day the patient complained of quite severe gas pain and suddenly noticed that his scrotum was beginning to swell. This swelling was painless but occurred at a considerable rate. Within two hours the scrotum was about 30 cm. in diameter and air crackles were heard within it. It seemed certain that the condition was in no way connected with the extravasation of urine as the patient voided with ease and the physical appearance and feel of the tissues were characteristic. The fact that a fistula was known to exist between the bladder and sigmoid did not explain the condition since it offered no anatomical basis for such an emphysema. The abdomen was ballooned up with gas and peristalsis was visible. The colostomy was opened and abdominal distention thereby relieved. The emphysema of the scrotum decreased very gradually. Two weeks elapsed before it was complete. The patient was none the worse for this unusual complication.

Because of the peculiar anatomical arrangement it seemed highly improbable that gas made its way into the bladder and thence into the subcutaneous tissues of the scrotum. A more plausible explanation is that leakage from another perforation or the same one burrowed through the peritoneum and under the fascial layers to emerge in front of the triangular ligament and infiltrate the adjacent subcutaneous tissues.

L. H. FOWLER, M.D.





Butler, T. H. The Influence of Trauma upon the Onset of Interstitial Keratitis. *Brit J Ophth* 9, 71, 43

The author draws the following conclusions:

1. An attack of interstitial keratitis may be precipitated by an accident to a cornea which is predisposed to the disease by syphilis or tuberculosis.

2. It is possible that a very slight trauma such as the instillation of drops or the irritation of general anæsthetic may have the same effect.

3. The attack in the injured eye may be followed by interstitial keratitis in the uninjured eye.

4. It is possible that an injury to one eye may cause an attack of interstitial keratitis in the other eye.

JAMES P. IRELAND, M.D.

Verhoeff, F. H., and Lamoliné, A. N. Hypersensitiveness to Lens Protein. Cataract Operation. *Am J Ophth* 92, 700

In previous papers the authors have shown that about 8 per cent of persons are hypersensitive to lens protein, and that when, in such persons, the lens capsule is opened by operation or injury, intra-ocular inflammation results. Because of the danger of rupturing the lens capsule in the intra-capsular operation they suggest desensitizing the patient's lens protein and removing the cataract by decapsulation followed by simple linear extraction. A case in which this was done successfully is reported.

JAMES P. IRELAND, M.D.

Hawthorne, C. O. Observations on the Significance of Retinal Hemorrhages. *Brit M J* 9, 495

In the author's opinion retinal hemorrhage may be without clinical significance but when this is true the bleeding is slight, as in certain cases of pneumonia, pyonephrosis, malignant disease of the viscera, mitral disease, etc. He believes that hemorrhage of this type would be seen more often if routine ophthalmoscopic examinations were made. Other retinal hemorrhages may be caused by violence such as birth trauma. A third type is the severe retinal hemorrhage endangering vision, which is not due to violence and is not accompanied by organic disease. The latter Hawthorne discusses in detail, describing particularly the changes in the vascular walls.

Uncomplicated retinal hemorrhage is of the same character as hemorrhage occurring in other parts of the body which is not due to violence or any appreciable organic lesion. A variation from the normal rate of blood coagulation will not account for it.

The probable explanation is rupture of vessels following damage to their walls, this damage in turn being the result of change in the quality of the blood or slight violence—perhaps mere changes in intra-ocular tension—acting on vessels which are particularly susceptible to the destructive influence of mechanical force.

THOMAS D. ALLAN, M.D.

# SURGERY OF THE NOSE, THROAT AND MOUTH

## NOSE

Wojciechowski, W. Polyps of the Base of the Skull  
(Ueber die Polypen der Schädelbasis). Sitzungs-  
ber. d. Gesellsch. f. Chir. u. Hals- u. Nasenkrankh.  
Petrograd, 1902

The monograph published by Kobylinskiy in 1902 completely exhausted the subject of polyps of the base of the skull up to that time. During the last decade however views have changed somewhat and therefore new critique is necessary. The author discusses the following points:

The histologic similarity of the tumors usually polyps at the base of the skull are angiofibrosarcomata. In one of the author's cases a marked difference between the peripheral and the central portions of the tumor was evident. In the former the number of cells was greater suggesting the microscopic picture sarcoma although macroscopically the neoplasm appeared to be ordinary polyp. Choanal tumor, on the other hand, consist mainly as is well known, of pure fibrous or edematous fibrous tissue.

The operative technique for the removal of polyps at the base of the skull. Of the old methods the route through the palate and the suprazygoid pharyngotomy of Jermitsch are the most dangerous. They do not cause disfigurement of the face, but they are not applicable to all cases. Facial methods must be avoided because of the resultant disfigurement. Therefore Denker proposed to reach the tumor through the vestibule of the mouth and the antrum of Highmore should be accepted for those cases in which the malignant tumor is located in the nasal cavity or the antrum of Highmore. Further experience is necessary, however to determine whether this route is suitable for the removal of large and deep seated growths. In one of the three cases operated on by the author by Denker's method there was a recurrence which resulted in death. This was a tumor of the nasopharynx. The route through the palate was used once by the author and the recurrence of the tumor removed later through the cleft in the palate. During the year the patient was kept under observation following the operation no further recurrence developed. The cleft in the palate caused no disturbance of function. In one severe case Kocher's section of the upper jaw was done. Another case was operated on according to the Hurtle method with reflection of the lateral nasal wall.

3. The reports of Kaprisonoff concerning the choice of operative methods in relation to the anatomic characteristics. In dolichocephalic persons the tumors at the base of the skull are reached more easily through the palate whereas in brachy-

cephalic persons they are reached more easily through the nose.

4. The classification of polyps at the base of the skull as a condition for the general surgeon or the rhinologist. In the author's opinion the sooner the patient consults a rhinologist the sooner an accurate diagnosis will be made. A recurrence will also be recognized by a rhinologist sooner than by a surgeon. A similar picture is presented by carcinoma of the larynx, the prognosis of which depends upon timely operation. On the basis of his experience the author comes to the conclusion that the surgical treatment should consist of the most conservative operation possible following early diagnosis.

WALKER (2)

Swarschewski, L. Intra-nasal Cephaloceles (Zur Frage der intra-nasalen Cephaloceles). *Monatsh.*  
f. 1901 1, 740

This article is a report of two cases. The first is that of a girl 7 years old. A growth removed by operation from the right nasal cavity was diagnosed on microscopic examination as a cephalocele but later more thorough examination showed that the structure of the tumor was as complicated as that of teratoid tumors, but it is an abnormal admixture of glial tissue. The second case is a case of naso-rhinal cephalocele in child 6 years old. Operation as refused.

The author classifies intra-nasal cephaloceles into three groups: (1) the anterior cephaloceles, that is, the common anterior cephaloceles which grow through in the form of tumors in the nose, (2) the middle cephaloceles, which penetrate into the skull cavity through the lamina cribrosa, and (3) the posterior cephaloceles which may extend into the nasopharyngeal space and the posterior parts of the nose. The first group offers no diagnostic difficulties. The diagnosis of those of the second group is more difficult as usually they resemble polyps or tumors growing from the upper nasal passage. The early appearance and slow growth of the tumor, the displacement of the nasal septum and the ossified ends of the process are valuable diagnostic features. A certain diagnosis can be made only on the basis of microscopic examination and an outflow of cerebrospinal fluid when an attempt is made to remove the growth partially. The posterior cephalocele is usually associated with other congenital changes in the skull and the brain.

The prognosis of anterior and middle cephaloceles is good but that of the posterior forms is less favorable.

In cases of anterior cephaloceles the extirpation of the tumor followed by plastic closure of the bony defect comes up for consideration. In cases of

middle cephalocele a waiting policy should be adopted if non-suppurative complications set in the growth should be removed intranasally but if suppurative complications develop and there is escape of cerebrospinal fluid, extranasal opening of the nasal sinuses with plastic closure of the bone defect is indicated. Posterior cephalocele are inoperable.

vo Houze (2)

## THROAT

Blalo, D. Resection of the Superior Laryngeal Nerve in Tuberculosis of the Larynx (Über die Resektion des N. laryngeus sup. bei Larynx-tuberculose) *Tuberkel* 9, 4.

As the author was unable to decrease the pain and rough of laryngeal tuberculosis with the usual surgical measures, he decided to try radical treatment in the form of resection of the superior laryngeal nerve. In the beginning, he applied the operation only to serious, hopeless cases, but as he became convinced of the ease of the technique, he tried it also in light cases which were not benefited by cauterage and the use of the galvanocautery. Altogether twenty five resections of the superior laryngeal nerve were done (twenty patients bilateral resection in five cases). In seven cases the condition was unilateral.

The superior laryngeal nerve may be exposed from within through the larynx, pharynx or from without by way of the neck. In the latter procedure it may be sought through a horizontal incision running parallel with the border of the thyroid cartilage or through a vertical incision along the border of the sternohyoid muscle. The author prefers the horizontal incision.

The operation is done under local anesthesia induced with 2 per cent cocaine-adrenaline solution or 1 per cent novocaine-adrenaline solution. Only the neurectomy itself causes pain. In some cases the pain radiates into the ear (four times in twenty-five

cases). Occasionally the search for the superior laryngeal nerve is difficult especially when the space between the hyoid bone and the upper border of the thyroid cartilage is narrow. Moreover the surgeon may mistake the border of the hyoid bone for the border of the thyroid cartilage and may penetrate at a higher level than necessary reaching the hypoglossal instead of the superior laryngeal nerve.

After the operation the nearby lymph glands of the neck and the submaxillary glands become swollen but the swelling disappears in the course of a few days. Occasionally the arytenoid and the aryepiglottic folds also swell. Swallowing the wrong way which usually occurs in patients operated upon is a serious complication.

In the author's cases the excruciating pain disappeared entirely after the operation and there were no recurrences in the four or five months during which he kept the patients under observation. Anesthesia of the larynx results from the resection of the superior laryngeal nerve, anesthesia and motor disturbances of the vocal cords were never observed. As the tactile sense remains normal even after bilateral division of the superior laryngeal nerve, the inferior laryngeal nerve or the rami communicantes which unite it to the superior laryngeal nerve must contain sensory fibers in addition to motor fibers.

In the author's opinion resection of the superior laryngeal nerve is necessary in cases of severe dysphasia in which other remedies cause no improvement. In cases of unilateral development of the tuberculosis it may effect a cure. Energetic local treatment may be undertaken afterward. It is not a dangerous procedure.

Simple resection of the superior laryngeal nerve by Hoffmann's method does not give permanent results therefore it is better to inject alcohol into the exposed nerve.

The article is supplemented by an extensive bibliography.

WALKER (2)







- Food results of surgical treatment of diseases of the stomach and duodenum. A J A HAMILTON. Canadian M. A. J. 922, xii, 630.
- Compensatory hyperplastic pyloric stenosis. D W PALMER. Arch. Pediat. 9, xxix, 58.
- Report of case of hypertrophic pyloric stenosis complicated with marked pylorospasm. H L MOORE. South M. J. 9, x, 609.
- Canine stomach. J H D WALTER. Lancet. 9, cccii, 707.
- Peptic ulcer notes from Dr. Sippy. J E DILLIE. Texas State J. M. 9, xxix, 57.
- Peptic ulcer medical and surgical types. W B THOMAS. Tex. State J. M. 9, x, xviii, 5.
- The end result of the treatment of peptic ulcer. G A BARNARD. Tex. State J. M. 922, xviii, 246.
- Natal or postnatal ulcer. A O SENGLETON. Texas Stat. J. M. 9, x, xviii, 248.
- Perforated gastric and duodenal ulcer. D PRA. An. Fac. de med. de Univ. de Montevideo. 922, cii, 01.
- The principles of the causal treatment of gastric ulcer. V. CH. RUS. Zentralbl. f. Chir. 9, xlix, 87.
- The relationship of the pyloric sphincter to recurring ulcer and peptic ulcer of the jejunum. H FROSTEN. Arch. f. klin. Chir. 922, ccc.
- Medical treatment of gastric ulcer. J J TAYLOR. J. Missouri Stat. M. A. 9, x, xix, 40.
- The effect of antral operations on the stomach upon the motor function of the stomach in cases of gastric and duodenal ulcer. O VON DREY. Beitr. klin. Chir. 9, cxxxv, 350.
- Two cases of perforated gastric ulcer operated upon and cured. H MONOD. Bull. et mémoires Soc. de chir. de Paris. 9, x, xliii, 03.
- Resection of the stomach for perforated ulcer. D HAZEL. Schweiz. med. Wochenschr. 9, li, 720.
- Surgical treatment of ulcer of the lesser curvature. A G THIELER. Schweiz. med. Wochenschr. 9, xlix, 700.
- Ulcer of the lesser curvature treated by sympathectomy. PAVON. Bull. et mémoires Soc. de chir. de Paris. 9, xliii, 994.
- Resection of the body of the stomach for liver report of series of cases with end results. F B JENKINS and J H I. Ochs. Ann. Surg. 9, lxxv, 400. [18]
- Drainage of the stomach after surgical treatment of chronic peptic ulcer. W B K. in Texas Stat. J. M. 9, x, xviii, 243.
- Two cases of fatal haematemesis due to acute ulceration of the stomach after an operation for ulcer. BOCHNER. Intern. Chir. 9, xix, 994.
- Factors influencing the life expectancy of patients operated on for gastric ulcer. D C BALFOUR. Ann. Surg. 9, lxxv, 405.
- The anatomy of ulcerations of the stomach. R. HOFFER. Beitr. klin. Chir. 9, cxxxv, 355.
- Contracture for neoplasms in the region of the pylorus. R CORREIA. Rev. clin. (Lisboa). 9, x, 389.
- Cancer of the stomach. I F GONZALEZ. Rev. clin. (Lisboa). 9, 5.
- The relation between the antral microscopic and macroscopic lesions of gastric cancer also few remarks on the statistics. J VONKIN. Beitr. klin. Chir. 9, cxxxv, 351.
- Pyloric cancer treated by gastrectomy. J A CORREIA. Rev. clin. (Lisboa). 9, 333.
- An ulcerous type of intestinal injury. G LA FITE. P. in Revue 10. xxix, xxv, part. 703.
- Report of perforations of the small intestine due to local infection. CAI. J. Am. M. A. 9, lxxxv, 047.
- Central pseudo-tumor of the small intestine consecutive to strangulated hernia. ALAMARTINE. I on chirurg. 922, xix, 4.
- Dilatation of the duodenum. W J T CLEGG. Whiston M. J. 9, xxi, 56.
- Foreign bodies in the duodenum. W GOLDSCHMIDT. Wien. klin. Wochenschr. 9, x, xiv, 6.
- A chronic duodenal ulcer following burn. L KIRCHMAYR. Deutsche Zeitschr. f. Chir. 9, cxxx, 09.
- Incomplete chronic stenosis of the second part of the duodenum caused by adhesions. CHARBONNEL. J. de med. de Bordeaux. 9, xxv, 909.
- Peptic ulcer of the jejunum in the light of old and new clinical experience. H O HANZLER. Arch. f. klin. Chir. 9, cxxx, 71.
- The formation of peptic ulcer in the jejunum. M. HOLLWACH. Zentralbl. f. Chir. 9, xlix, 864. [19]
- The peptic ulcer of the small intestine. O HALLER. Noy. Chir. Arch. 922, i, 68.
- A case of subtotal volvulus of the intestine. G RAZZA. Arch. Reform. med. 922, xxxviii, 803.
- Intestinal colic. A A ZETTLIN. Medicinisch. Gesellsch. 922, 1.
- Intestinal obstruction. W I KENDALL. J. Oklahoma State M. A. 922, xv, 70.
- Acute intestinal obstruction. J O CONNOR. Brit. M. J. 922, ii, 598.
- Foreign bodies in the intestine rare diagnostic error. A M CASANOVA. Zentralbl. f. Chir. 9, xlix, 863. [20]
- Primary sarcoma of the intestine. T HILLET. Orvosi Lapok. 9, x, xix, 47.
- Rupture of the intestine caused by intussusception of an incarcerated hernia. I SCHWAB. Deutsche med. Wochenschr. 922, xliii, 800.
- A penetrating wound of the peritoneum with puncture of the intestine. F C WANDERER and M. L. WANDERER. J. Am. M. A. 9, lxxxv, 806. [20]
- Intestinal tuberculosis with perforation into the bladder. RUS. Deutsche med. Wochenschr. 9, xli, 09.
- Intestinal cancer. L LOREN. J. de med. de Bordeaux. 922, xxv, 39.
- Pieces of the proximal portion of the colon from the clinical-surgical standpoint. A L FRAUVOIR. Noy. Chir. Arch. 9, x, ii, 57. [21]
- The consequences of surgical injury of the median colic vessels. G B MACCAGGI. Arch. ital. di chir. 9, vi, 35.
- Extirpation of the transverse colon with the carcinomatous stomach. W. VOORDEHOFF. Nederl. Tijdschr. Geneesk. 92, lxxv, 156. [22]
- Tumor of the transverse colon. extirpation. resection of the large intestine. decompression. anastomosis. recovery. P. REE. Lyon chirurg. 9, xix, 475.
- Intestinal carcinoma due to polypic megacolon. S. WY. Lyon chirurg. 9, x, xix, 30.
- The value of temporary colostomy. L J HIRSCHMAN. J. Am. M. A. 9, x, lxxxv, 01. [22]
- The elimination of an artificial anus. W. ON. RUTHER. Zentralbl. f. Chir. 9, xlix, 717.
- The pelvic appendix. R. MONTGOMERY. Lancet. 9, cccii, 553.
- Appendicular diverticulum and its sequelae particularly pseudomyxoma peritonei. W. LÖNNER. Deutsche Zeitschr. f. Chir. 9, cxxx, 30.
- The differential diagnosis between appendicitis and uterine cancer, with report of cases. A. S. BROWN. J. Arkansas M. Soc. 92, xix, 00.
- Appendicitis and uterine invagination. L. VONKIN. München. med. Wochenschr. 9, lxxv, 53.
- Appendix in situ. invagination also. brief note on the





## SURGERY OF THE EXTREMITIES

## Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Acromioclavicular from the surgical standpoint P A HUNTER  
Nowy Chir Arch 922, 83
- A case of osteogenesis imperfecta M F L KIRBY  
Lancet, 9, Oct., 66
- Frigitas osseum associated with blue sclerotics H  
SNYDER Brit Med J 9, 2, 499
- A critical study of two cases of rickets developing in  
breast-fed infants A BROWN A M COCHRAN F T  
TRENKLE and I I MACLEOD Arch Pediat 922  
359
- An analysis of 60 cases of osteomyelitis with end-  
results J S BRIDGES South M J 9, xv 7
- A case of fatal osteomyelitis involving acute articular  
rheumatism P GAUTIER Rev méd de la Suisse Rom  
922 212, 576
- Bone absorption the basic cause of renal calculus in  
twenty cases following uric acids H F I WIL Canadian  
M J 9, 2, 638
- Tuberculosis in children from the standpoint of the  
orthopedist J F GOLDBLATT Boston M & S J  
9, Dec., 466
- Tuberculosis in children from the standpoint of the  
surgeon L T BROWN Boston M & S J 922 Dec.,  
470
- Osteitis tuberculous multiplex cystica N VOORHOUT  
Nederl Tijdschr Geneesk 92, 12, 33
- Tuberculous therapy in suppurative tuberculosis H A  
MCKINNEY and H THAYER Pennsylvania M J 922  
225
- Tumors of bone J C BLOOMGOOD North East Med  
922 222, 308 [25]
- Primary multiple sarcomata of the bones B MACK  
Poland Rome, 922, 222, 223, 473
- Arthritis F BRIDGES Northwest Med 9, 222 205
- The experimental production of arthritis A LEVIN  
Proc Roy Soc Med Lond 9, xv Sect Odont  
65
- Chronic arthritis—some phases in its etiology and  
treatment A A FLETCHER Canadian M J 922,  
222 233
- Some observations on the treatment of gonococcal  
arthritis in the male N VICKERS South M J 9, xv 737
- Some diagnostic pitfalls in arthritis L J LEE Illus  
Practitioner 9, Oct., 26
- Chronic arthritis O L VILKOVICH Rev Assoc med  
argent 9, 222 333
- Artificial and acquired connective tissue barriers and  
their relation to the joint B MARIN Arch f klin  
Chir 9, Oct., 28
- Painful unilateral prosthesis due to overgrowing of  
ligaments GUNDELLOT and BRAUN Presse méd Par  
9, 222 8
- The etiology of ischemic muscular contracture O  
BROCK Arch f klin Chir 922, Oct., 6
- The nature and treatment of muscular atrophy H C  
STEWART and P BAILEY J Lab and Clin Med 92  
746
- The traumatic mechanical origin of spontaneous sep-  
arations of cartilage (so called osteochondritis dissecans)  
M KAPPE Deutsche Ztschr f Chir 92, 222, 3
- An affection of the costal cartilage following infectious  
disease D I PETERSON-WALKER Westn Chir  
program abstract, 9, 49

- A case of curious deformity of the ulna following injury  
H A T FAIRBANK Proc Roy Soc Med Lond 9  
xv, Sect Orthop 8
- Non union of the ulna after operation D M ATKIN  
Proc Roy Soc Med Lond 9, xv Sect Orthop 8
- Disability of the hand and rat W A COCHRAN  
Edinburgh M J 9, xv, 97
- Mild deformity of the left wrist R C ELLIOTT  
Proc Roy Soc Med Lond 9, xv Sect Orthop 8
- An anomaly of the first and second ribs J I O HURZ  
Nederl Tijdschr Geneesk 9, 12, 26
- The ossification of the acromioclavicular and the significance  
of the superior tubercular tubercle in man G P RAY  
Chir d organs du mouvement 9, vi 485 [26]
- A case of arthritis of the hip in a girl aged 9 years H W  
HOWELL Proc Roy Soc Med Lond 9, xv Sect  
Orthop 20
- Observations on osteo arthritis of the hip G PARAJ  
Brit M J 9, 2, 370
- Dislocation processes in the center of ossification of  
the tuberosity of the tibia W R BRADLEY Nowy Chir  
Arch 922, 3
- A large process in the posterior part of the ankle ob-  
structing movement of the foot C J B WATSON Ugebl  
f Læger 922, 1222
- The foot factor in the future of women H WILD  
Nation's Health 92, 2, 320
- Modern footcare as a cause of leg pain, muscular  
rheumatism and flat foot S D FARWELL BRIT J Roy  
Army Med Corps, Lond 922, 222, 7
- Accessory bone representing the 11th rib of the scapula of  
foot R C ELLIOTT Proc Roy Soc Med Lond  
92, xv Sect Orthop 8
- The metatarsophalangeal syndrome of Koehler O  
ALBERT Chir d organs du mouvement 922 vi, 569 [27]
- T cases of new metatarsal disease P R BOTT  
Proc Roy Soc Med Lond 922 xv Sect Orthop 20 [27]

## Fractures and Dislocations

- Fractures H R BLACK Internat J Surg 9, 222  
300
- Calcium and phosphorus metabolism in patients with  
fractures F F THOMAS and R I HARRIS J Am M  
Ass 922 June 22, 222
- Fractures comparison of end results from the stand-  
point of treatment G S FORTNA Am J Surg 9  
222, 22
- Some remarks on the treatment of fractures T H  
HARRISON Internat J Surg 9, 222 205
- The functional treatment of fractures of the long bones  
and of contractures A W MILES Brit Westn Chir  
program abstract 9, 2, 165
- The management of fractures near joints P H KAPPE  
Chir Central J M 92, 2, 51
- Fracture of the spine of the scapula N TAGG ACCIA  
Rev Assoc med argent 9, 222 364
- An unusual case of retrosternal dislocation of the clavicle  
A SCHLÖSSER München med Wchnsch 9, 2, 122 [28]
- Fracture separation of the lower humeral epiphysis  
F D BAILEY Practitioner 922, 222, 244 [28]
- Location of the elbow in the newborn hand Zentralbl  
f Gynæk 922 222, 3, 8



## MISCELLANEOUS

## Clinical Entities—General Physiological Conditions

On the relations of heredity and environment of constitution and condition t predisposition to disease L F BAKER *Canadian M Am J* 922 22, 60

The dangerous disorders of the ductless glands W ECHLIN *Northwest Med* 922 22, 48

The recent evidence as to the nature of cold shock W B CANOBY *Northwest Med* 922 22, 350

Preventiv treatment of shock or anaphylaxis the treatment of shock or cold therapy, the treatment of the complications of shock G LYON *Arch de med chir y special* 92 vtn, 537

Anapnoeic and anapnoeic symptoms in septic and borderline conditions J WERNER *Beitr klin Chr* 92 cxvii

Surgical aspects of amebiasis K K CHATTERJI *Indian M Gaz* 922 174, 333

Simple and painless treatment of furuncles KUTZLER *Deutsche med Wchnsch* 9 xlviii, 866

Malignant points of the face E J MILLARD *Med J Australia* 9 2, 366

The classification, terminology and etiology of tumors S GRIST *Kentucky M J* 922, 21, 67

Progress in cancer research G LUDIN *Minnesota Med* 922 50

Has cancer pigimentary origin? G T BEATSON *Lancet* 922 ccc, 625

Recurrent venous thrombosis in carcinoma E ELIOT, *J Am Surg* 92 lxxv, 324

The secondary manifestations of malignant disease A PRINCE *Ann Surg* 922, lxxv, 3 [27]

The causative etiology of carcinoma V MARKOWITZ *Zentralbl f Chr* 922 xlv, 95

End results in cancer as influenced by type, location, location, and age C H M RO *Ann Surg* 922, lxxv, 308 [22]

Thyroid diseases and the malignancy of thyroid tumors I S RICHMOND *Lancet* 922, ccc, 702

What is accomplished with the surgical treatment of sarcoma? H KUTZLER *Klin Wchnsch* 9 2, 4, 893

## Serum, Vaccines, and Ferments

The scope of vaccine therapy C E JEVONS *Lancet* 922 ccc, 564

Results upon an abdominal parietal abscess cured by tuberculin J B GALLEGO *Sanz Arch espal de enferm d spar digest* 922 513

## Blood

The effect of massage, heat, and exercise on the local circulation A W HENSLY *California State J M* 922, 22, 276

A new histology of red blood corpuscles and staining technique E L DREWY *J Indiana M Am* 922 xv 302

Chemical changes of the blood during regeneration O L ROSENBERG O F KAPLAN, and A BERGMAN *Am J M Sc* 922, clxiv, 36

Pseudo-leukemic splenic anaemia in infants C LOWRY *Boi Soc med chirg S Paulo* 922, 65

A study of the severe secondary anaemia A E MARK *Minnesota Med* 922, 136

Blood transfusion SCHOTTEY *Zentralbl f Gynack* 922 xlv, 165

The use of desiccated blood serum in the selection of donors for transfusion W D GILL *Mil Surgeon* 922, h, 285

Direct transfusion of blood report of cases J S HOSLEY W T V DEBARK, and A I DOBSON *Arch Surg* 92 302

Blood transfusion an automatic method of titration at body temperature W B HILL *Lancet* 922 cccii, 50

Results of sixty-one cases of blood transfusion V PAUCOT *Bull Acad de med Par* 9 2, lxxvii, 684

## Blood and Lymph Vessels

Report of case of primary intravascular tumor probably spindle-cell sarcoma A EDWARDS *Mil Surgeon* 922, h, 288

Notes on case of aneurysm of the basilar artery E W WALK *J Roy Army Med Corps, Lond* 92 xxix, 6

Spontaneous rupture of the internal carotid artery with hemorrhage from the ear R J HOWARD *Laryngoscope* 9 2, 678

Traumatic erosion of an anomalous right subclavian artery through the posterior wall of the oesophagus H M SCOVILLE *J Am M Am* 922, lxxv, 5

Aortic insufficiency J F WOODS *J South Carolina M Am* 922, xlvii, 222

Aortic, with special reference to syphilitic aortitis S B B CAMPBELL *Edinburgh M J* 9 2, 207, 99

Embolism of the abdominal aorta C F WILCOX *Canadian M Am J* 92 22, 647

Miscellaneous thromboses—with report of 1 cases C B PARKIN *Canadian M Am J* 922 22, 605

## Surgical Diagnosis, Pathology and Therapeutics

The testis bacillus as an intestinal saprophyte in man C THOMSON and J H BAUER *J Exper M* 922, lxxvi, 96 [22]

## Experimental Surgery and Surgical Anatomy

Graft from woman ovary in the peritoneal cavity t rabbit, histologic examination of graft after four months MACLEOD and LACROIX *Bull et mssn Soc anat de Par* 922, lxx, 358

## Roentgenology and Radium Therapy

Handbook of roentgenology for physicians H HINCKE and R ARNOLD Berlin Springer, 922

The planning and equipment of modern X ray laboratory H J ALKINS *J Radiol* 92 22, 376

The new roentgen universal-exposure table of Hiedler A SPRINGER *Sch eis med Wchnsch* 9 2, 68 [24]

T elv months' experience with the Potter Backy dam plerap V McDONALD *Med J Australia* 9 2, 35

Roentgen ray studies of the mesolachrymal passage J D M CAMPBELL, J M CAMER, and H P DOX *Arch Ophth* 922, h 462

Problems of dental radiography A R EISENBERGER *Internat J Orthodont Oral Surg and Radiograph* 922 vii, 122

- A roentgenographic study of developmental anomalies of the spine. C. G. W. HILLMAN & J. R. HOBBS. *Am J Surg* 9: 357.
- The roentgen diagnosis of the more important tumors of the lung. B. H. NICHOLS. *Surg Gynecol Obstet* 9: 307. [24]
- Roentgenological interpretation in pulmonary abscess. W. H. STEWART. *N York Med J* 31: 32, 33, 34.
- The X-ray diagnosis of diseases of the lungs. V. GALVANI. *N York Med J* 31: 32, 33, 34.
- X-ray findings and combination chest conditions of chronic gastric cancer. C. H. HERRICK. *Am J Surg* 9: 357.
- The X-ray in the diagnosis of pulmonary tuberculosis. S. W. HILLMAN. *Boston M & S J* 9: 357.
- The normal stomach. A. I. BURCH. *Arch Radiol and Electrotherap* 9: 357.
- Cancer of the stomach. J. H. D. WHELAN. *Arch Radiol and Electrotherap* 9: 357.
- The roentgenological aspects of achylia gastrica. A. W. CHURCH. *Am J Roentgenol* 9: 357. [25]
- The roentgenological demonstration of altered gastric contents. I. SACHS. *Arch Radiol and Electrotherap* 9: 357.
- A new method for the roentgenological exploration of the kidney—pneumoperitoneum. J. H. D. WHELAN. *Am J Surg* 9: 357.
- Outlining the superior strand of the pelvis by means of the X-ray. H. THOMAS. *Am J Surg* 9: 357.
- The therapeutic value of the roentgen ray. A. U. DRYGALSKI. *Am J Surg* 9: 357.
- Irradiation of carcinoma of the rectum. J. H. D. WHELAN. *Am J Surg* 9: 357.
- The roentgen treatment of frostbite. J. H. D. WHELAN. *Am J Surg* 9: 357.
- A new instrument for measuring roentgen rays. J. H. D. WHELAN. *Am J Surg* 9: 357.
- Recent developments in radiotherapy. R. H. W. CALVERT. *Am J Surg* 9: 357.
- The dosage and curative effect of roentgen rays. J. H. D. WHELAN. *Am J Surg* 9: 357.
- High voltage X-ray therapy. R. H. WHELAN. *Am J Surg* 9: 357.
- Deep radiography. C. HERRICK. *Am J Surg* 9: 357.
- Technical and clinical aspect of the new deep roentgenotherapy. J. T. CARR. *Am J Roentgenol* 9: 357.
- The dosage of deep roentgenotherapy. W. H. D. WHELAN. *Am J Surg* 9: 357.
- A report of deep X-ray therapy as practiced in Germany. R. T. PYRRIE. *Am J Surg* 9: 357.
- On penetrating radiotherapy by X-ray and radium. R. PROSS. *Arch Radiol and Electrotherap* 9: 357.
- Deep radiotherapy in the treatment of cancer. C. CHAMBERLAIN & P. DANCOS. *Presse Med Paris* 9: 357.
- The continuous roentgenotherapy of osteosarcoma. K. M. JOHNSON. *Am J Surg* 9: 357.
- Roentgenotherapy of intracranial passages following spinal anesthesia. C. J. M. STEIN & C. ULLER. *Am J Roentgenol* 9: 357. [26]
- Carcinoma of the stomach. D. C. GREEN. *Am J Roentgenol* 9: 357.
- A case of Hodgkin's disease treated with roentgen rays.

- for a year. K. R. ALLEN & W. C. VAN GUREN. *Arch Int Med* 9: 357.
- Statistics and technique in the treatment of malignant neoplasms of the larynx. D. QUACK & F. M. J. JONES. *Am J Roentgenol* 9: 357.
- Radiation therapy of hyperthyroidism. W. O. CASEY. *J Michigan Med Soc* 30: 357.
- The results of the treatment by radiation of primary operable carcinoma of the breast. B. J. LEE. *Am Surg* 9: 357.
- The treatment of pyoderma by the X-ray. W. L. ROWE. *Med Herald* 9: 357.
- The ultraviolet and X-ray as physiological complement in therapy. A. W. HERRICK. *Am J Roentgenol* 9: 357.
- Electrotherapy and the X-ray. I. ROSENBERG. *Report Med Soc* 9: 357.
- Studies in radium. H. WHELAN. *Canadian M J* 9: 357.
- An apparatus for the purification of radium emanation. C. P. WHELAN. *J Radiol* 9: 357.
- The application of radium in disease of the skin. F. C. HARRISON. *Canadian Pract* 9: 357.
- Radiation changes in myelogenous leukemia following radium treatment. D. R. WHELAN. *Boston M & S J* 9: 357.
- The treatment of chronic rheumatism, with special reference to radium. L. L. WHELAN. *Canadian M J* 9: 357.
- The effect of radium on the normal tissues of the head and spinal cord of dogs, and its therapeutic application. E. P. PROSSER. *J Am Med Assn* 9: 357.
- The use of radium in the treatment of cancer. H. R. LEE. *Am J Roentgenol* 9: 357.
- Radium treatment of disease of the skin. C. P. WHELAN. *Am J Roentgenol* 9: 357.
- The treatment of cancer with radium. I. A. C. CASEY. *Canadian Pract* 9: 357.
- Malignant melanoma and its proper treatment. A. W. HERRICK. *Am J Surg* 9: 357.
- Considerations of the therapy of cancer. S. LAMONT. *Arch Radiol and Electrotherap* 9: 357.
- Carcinoma of the esophagus, with performance of the morris observations on radium therapy. J. O. CASEY & C. W. HARRISON. *Am J Med Sc* 9: 357.
- Carcinoma of the esophagus, with performance of the morris observations on radium therapy. J. O. CASEY & C. W. HARRISON. *Am J Med Sc* 9: 357.
- Ultra violet radiation. A. J. PACEY. *J Radiol* 9: 357.

# Industrial Surgery

- Septic infection in industry. A. W. COLEMAN. *Am Med* 9: 357.
- Metastasis and results of surgery suggested percent age. B. W. J. J. MONTGOMERY. *J Am Med Assn* 9: 357.

# Hospital Medical Education and History

- The origin and scope of the modern state hospital. C. A. B. N. Y. Med J & Med Rec. 9: 357.
- Some suggestions on the future of hospitals. H. J. W. HERRICK. 9: 357.
- Some of the recent advances in surgery. H. R. DUNCAN. *Texas Med J* 9: 357.

## Legal Medicine

- The legal status of physicians and sectarians. F. R. GARDNER. *Am M Ass* 92, 1892, 24.  
 Mother not liable for services for adult daughter—compensation of expert witnesses. McClenahan vs. Hayes (Calif.) 206 Pac. R. p. 454.

## GYNECOLOGY

## Uterus

- Frequency and clinical significance of displacements of the uterus. P. F. NOLAN. *J Am M Ass* 92, 1892, 792.  
 The diagnosis and treatment of genital prolapse. J. J. JONES. *Ann Obst* 922, 10, 78.  
 Uterine prosthesis. A. H. HOSKOT. *Brit J Obst & Gynec* 922, 10, 352. [41]  
 Three cases of an erosion of the uterus. R. W. WOODALL. *W. J. Press*, 922, 200.  
 The significance of anastomosis of the uterine vessels as indicated by an arteriogram. Report of the uterine artery and vein due to an aortal bomb injury. J. A. HALL. *J Gynec* 922, 10, 370. [41]  
 Accidental perforation of the uterus. A report of three cases. G. W. O'NEILL. *Am J Obst & Gynec* 922, 10, 376.  
 The indications for total ablation in certain cases of rupture of the uterus. H. O. O'NEILL. *Zentralbl f Gynec* 922, 10, 370. [41]  
 Chondrosarcoma of the uterus and adnexa. I. N. COLETT. *Reform* 922, 10, 370.  
 What is the relation of hyperplasia to fibroid disease of the uterus? J. O. PEARL, J. A. BIRNBAUM, and A. B. MCGILVER. *Am J Obst & Gynec* 922, 10, 370. [41]  
 Myometrium and radiation in the treatment of fibroids. G. W. WOODALL. *W. J. Press* 922, 10, 370.  
 Irradiation and coagulation of uterine fibroids. J. A. HALL. *Brit J Obst & Gynec* 922, 10, 370. [41]  
 Carcinoma of the cervix of the uterus and bilateral hydrosalpinx. H. W. WOODALL. *Brit J Obst & Gynec* 922, 10, 370. [41]  
 Cancer of the cervical stump and uterus in the form of an appendix. H. T. HALL. *Surg Gynec & Obst* 922, 10, 370. [41]  
 The results of the surgical treatment of carcinoma of the cervix. H. T. HALL. *Ann Surg* 922, 10, 370. [41]  
 A study of chondrosarcoma of the bodies of the uterus. J. A. HALL. *Am J Obst & Gynec* 922, 10, 370. [41]  
 The rapidity of growth of carcinoma of the uterus. W. T. HALL. *Zentralbl f Gynec* 922, 10, 370. [41]  
 Radiation considered as the ideal palliative treatment in inoperable cases of uterine cancer. Also in cases in which the disease returns after operation. C. J. JONES. *J Obst & Gynec Brit Imp* 922, 10, 370. [41]  
 Myometrium, subperitoneo-ovariectomy, and abdominal peritoneal excision of the uterus in one stage. H. WOODALL. *Med J Australia* 922, 10, 370. [41]  
 The direction of the uterus in the Wertheim operation. T. PIZZARO. *Bolet de la Soc de Obst y Gynec de Buenos Aires* 1922, 10, 370. [41]

## Adnexal and Perit Uterine Condition

- Ectopic gestation. A subject to the patient and to the practitioner. C. R. ANDERSON. *J Iowa Med Soc* 922, 10, 370.

- The validity of the provisions of the narcotic drug act. F. R. GARDNER (Okl.) 206 Pac. R. p. 454.  
 Validity of license to an physician. City of Redding vs. Dozier (Calif.) 206 Pa. R. p. 455.  
 Absence of attending physician in emergency—expert testimony. Brown v. Hoffman et al. (W. V.) S. F. R. p. 459.

- A clinical and embryological report of an extremely early total pregnancy together with study of decidual reaction, intra uterine and ectopic. W. A. DONLAVY. *Am J Obst & Gynec* 922, 10, 370. [41]  
 A contribution to the causality of adnexal hernia development of rare case of incarceration of tubal pregnancy in an inguinal hernia. A. BIRNBAUM. *W. J. Press* 922, 10, 370. [41]  
 Endometriosis and endometriomyoma of the ovary. W. BLAIR BELL. *J Obst & Gynec Brit Imp* 922, 10, 370. [41]  
 A voluminous dermoid cyst of the left ovary containing various tissues excised by total hysterectomy. A. C. LEE. *Semin Med* 922, 10, 370. [41]  
 A case of ovarian cyst opening into the sigmoid angle of the colon. A. J. BIRNBAUM. *Bolet de la Soc de Obst y Gynec de Buenos Aires* 1922, 10, 370. [41]  
 Adenomyoma of the retrovaginal space and its association with ovarian tumors containing fatty material. A. HALL. *J Obst & Gynec Brit Imp* 922, 10, 370. [41]  
 Potential adenomyoma of the endometrial type. Their importance and their relation to ovarian adenomyoma of the endometrial type (perforating hemorrhagic cyst of the ovary). J. A. HALL. *Arch Surg* 922, 10, 370. [41]  
 Adenomyoma of the retrovaginal space associated with a large cyst containing material of decaying contents. Case in the ovary. W. A. DONLAVY and W. R. DODD. *J Obst & Gynec Brit Imp* 922, 10, 370. [41]  
 Results of the surgical treatment of long standing tumors of the adnexa. A. PIZZARO. *Bolet de la Soc de Obst y Gynec de Buenos Aires* 1922, 10, 370. [41]

## Internal Genitalia

- A case of diptheria. J. A. HALL. *Med Press* 922, 10, 370. [41]  
 The successful treatment of chronic non-infectious vaginal discharges with tropane. I. HALL. *Am J Clin Med* 922, 10, 370. [41]  
 The formation of an artificial vagina by the transplantation of a loop of intestine. LACOSTE. *J Obst & Gynec* 922, 10, 370. [41]  
 A new method for the surgical treatment of congenital agnathia. U. CA. *Ann Ital di chir* 922, 10, 370. [41]  
 A new method for the surgical treatment of agnathia. U. CA. *Ann Ital di chir* 922, 10, 370. [41]  
 A new method for the surgical treatment of agnathia. U. CA. *Ann Ital di chir* 922, 10, 370. [41]

## Miscellaneous

- No. on form of pelvic hydrocele and its treatment. F. D. BROWN. *Med J Australia* 922, 10, 370. [41]  
 A review of cases of ovarian tuberculosis, with special reference to the end results of operative treatment. R. PIZZARO. *Am J Obst & Gynec* 922, 10, 370. [41]  
 Drainage of pelvic abscesses through the rectum. J. I. RANSON. *Internat J Surg* 922, 10, 370. [41]

- I. teratogenic aspermy hyperemia in gynecology. J V TORO. *Am J Obst & Gynec* 1932 iv 360 [44]  
 The Douglas cry in cancer. ALBERTY. *Lyon chirurg* 9 iii 479 [45]  
 Penetrating mole and homo-epithelioma. J C ARMADA, R P ENCALIZ, and S ALAZA. *Boi de la Soc de obst y gynec de Buenos Aires* 19 1 86  
 Malignant chorionic epithelioma with hemorrhage into the abdominal cavity. ACCIARONE. *Muenchen med Wochenschr* 1932, lxxx 51 [45]  
 Vascular mole and placenta previa. W H LOWMAN. *Brit M J* 1932 504  
 Backache as related to gynecological and orthopedic conditions. W A BORD and R C SHERRA. *J South Carolina M Ass* 9 xviii 86  
 The etiology of sterility in the female, from an analysis of 500 case records. D MACDONALD. *Boston M & S J* 1932 cxxxvii 397 [45]

- Some aspects of the problem of sterility. S R MEXIA. *Boston M & S J* 1932 cxxxvii 315  
 An appraisal of ovarian therapy. E NOVAK. *Endocrinology* 1932 vi 599  
 The autotransplantation of endometrial tissue in the rabbit. V C JACOBSON. *Arch Surg* 1932, lxi  
 A case of primary carcinoma of the female urethra treated with radium. L A FORRESTER and F W MURPHY. *Surg Gynec & Obst* 1932, lxxv 355 [45]  
 X ray treatment of hemorrhage, dysmenorrhea, and ovarian fibroids. I P HERNIMAN. *Med Times*, 1932, l 345  
 X ray and radium in conservative gynecology. A E HASTELTINE. *Am J Obst & Gynec* 1932, iv 393  
 The value of radium in gynecology. J A McGARRY. *Therap Gaz* 1932, xlvii 609  
 Radium in the treatment of diseases of women. W H B ALPHEA. *Canadian Pract* 1932, xlvii 387

## OBSTETRICS

### Pregnancy and Its Complications

- Pre maternity work. J C WINTER. *Med J Australia* 1932, 2 1, 325  
 The use of carbohydrates in the poison and vomiting of pregnancy. V J HARRIS and B P W. *Lancet*, 1932 cxxx, 649  
 Treatment of hyperemesis gravidarum. G C H McFARLANE. *California State J M* 1932 xx 5  
 Eclampsia. commentary on the reports presented to the British Congress of Obstetrics and Gynecology June 30 1932. T W EDIE. *J Obst & Gynec Brit Emp* 9 1932, 386  
 The relationship of eclampsia to the other toxemias of pregnancy. G LINGGROVE. *J Obst & Gynec Brit Emp* 9 2, 1932 402  
 A case of eclampsia illustrating the use of veratrum. A BOWATZ. *J Obst & Gynec Brit Emp* 1932 lxxx, 43  
 Treatment of eclampsia by cauterization. T C SKELVINE. *J Obst & Gynec Brit Emp* 9 1932 406  
 Premature separation of the normally implanted placenta. W D I LEXTON. *Ohio State M J* 1932 xxvi 595  
 Heart disease in pregnancy. S NICHOL. *J Am M Ass* 1932 lxxx, 893  
 Hemis during pregnancy. L HANCOCK. *Zentralbl f Gynec* 9 1932, 937  
 Sacralization of the fifth lumbar vertebra causing pain during pregnancy and the puerperium. A J GERRY. *Boi de la Soc de obst y gynec de Buenos Aires* 1932 1 8  
 The complications of induced abortion. A P VIORETTI. *Boi de la Soc de obst y gynec de Buenos Aires* 9 1 83  
 Carcinoma and pregnancy. F WOLFE. *Zentralbl f Gynec* 9 1932, 743  
 Intra-natal deaths. L HOLLAND. *Brit M J* 9 589  
 Fetal death due to toxemia. A L McFARLANE. *Brit M J* 9 58 590  
 Syphilis as cause of ante-natal death. J V CRUCE. *BRIT M J* 9 591  
 Placental changes in relation to fetal death. G I STRACHA. *Brit M J* 9 1, 2, 594

### Labor and Its Complications

- The most common pelvic strictures and their clinical treatment. I PEDERIAN. *Siglo med* 1932 lxxx, 396

- Fashionable sterility. J A COVICH. *Med J Australia*, 1932, 2 1, 344  
 The diagnosis and management of occiput posterior positions. E L CORVILL. *Illinois M J* 1932, xli 397  
 A rare case of dystocia in twin pregnancy due to anomalous podalic engagement. E GILLO. *Obstet* 1932, xlv 73  
 A case of rupture of the cord occurring during forceps delivery. W E LEE and J S LARSEN. *Lancet*, 1932 cxxx, 709  
 Notes on selection in the course of labor. M BOUTLET. *Med Press*, 9 1932 97  
 Our present knowledge and experience concerning cesarean section. E P DAVIS. *J Am State M Soc* 1932, xii 35  
 Cesarean section. J L STRATTON. *Practitioner* 1932 cxx 14

### Puerperal and Its Complications

- A new suggestion in the treatment of puerperal chills. J T A WALKER. *Med Press*, 9 1, 1932 10  
 Puerperal infection: its prophylaxis and treatment. W T CHERRILL. *Med J Australia* 1932 2 317  
 Septic infection following abortion or delivery. A S JAYNE. *J Indiana M Ass* 1932 xv 393  
 Anatomical lesions in puerperal infection. LOCA. *J de med de Bordeaux*, 9 1932 308  
 Immediate repair of lacerations versus delay. A X FICKERT. *Kaschitzky M J* 1932 xii 390

### New Born

- An interesting case of strangulated hernia in a new born infant. ROCHER and MAIST. *J de med de Bordeaux*, 1932 cxxx 543  
 Ant-natal intra-natal, and neo-natal death: causes, pathology and prevention. J B HALLATYNE. *Brit M J* 1932, 4 583  
 Neo-natal death. T J BROWNE. *Brit M J* 1932, 4 590

### Miscellaneous

- Conservative obstetrics. G M BORD. *Pasadenian M J* 1932 xiv 390  
 Obstetrical emergencies. R S TITUS. *Boston M & S J* 9 1, cxxxvii 594

## GENITO-URINARY SURGERY

## Adrenal, Kidney and Ureter

- Excision of the suprarenal capsule in epilepsy K. WOLFFWITZ Fortsch d Med 9 21, 309
- The formation of the horseshoe kidney, examinations of human embryos 35 years long K JAKY Medicina 31yul 9 24
- A case of double kidney and double ureter with review of the literature C M HARTWITZ, T H BROWN, and H A DYCKER Ohio Stat M J 9 212, 603
- Pathological complications with duplication of the renal pelvis and ureter (double kidney) W F BRASCH and A J SCHULL J Surg Gynec & Obst 9 220, 40 [47]
- The present status of renal functional tests N M KIRBY Ann Clin Med 9 4, 6
- The logical interpretation of the phthalein test and Ambard coefficient in certain disturbances of kidney function J A SCHERER and W A BRADSHAW Pennsylvania M J 9 211, 838
- Renal function and the amount of functioning tissue T AUST Arch Int Med 9 211, 315
- The question of renal decapsulation in acute injury to the kidney A HORNE Arch Intern Ch 9 2, 21, 24
- Pressure used in pyelography and its effects upon the kidney L C TOGO and S R TANNER J Urol 9 21, 24
- Surrounding the diagnosis of some kidney and bladder diseases by one of the cystoscope and X ray O J SLOAN M J 9 21, 44
- A review of series of kidney W C I M KIRK Canadian M J 9 21, 29
- The commercial factor in chronic renal disease I WILSON J Am M Ass 9 212, 107
- Polycystic kidneys P B WATTS In Fac de med de L n de Montevideo 9 21, 25
- Polycystic kidneys hypernephroma case report I WATTS Kentucky M J 9 212, 607
- The clinical importance of vesical infarction of the kidney P W WATTS Am J M Sc 9 212, 380
- Neural shock infarctions of the kidney P I SLOCUM J Indiana M Ass 9 21, 26
- Renal metastasis D W MACKENZIE Canadian M J 9 21, 29
- Bilateral kidneys of the kidney and ureter Trif 2207 from Chicago 9 212, 41
- Bilateral renal calculi case report O C R BROWN M J 9 21, 25
- The diagnosis and treatment of nephroblastoma I C JACKSON and W C C In Am J Surg 9 212, 107
- Hemorrhagic acute infectious nephritis and pyelonephritis B R VERNER Acta chirurg Scand 9 212, 125 [47]
- The regulation from von of the kidney in nephritis I M WATTS Canadian M J 9 212, 60
- Certain phases of the chronic nephritis problem H A CANN Northern Med 9 212, 27
- Hydronephrosis I R WATTS Wisconsin M J 9 212, 21
- Leukoplakia of the kidney pelvis H L KRENNER Arch Surg 9 212, 21
- Some of the features of the symptomatology of pyelitis D J A MILLER Arch Pediat 9 212, 61
- The diagnosis and treatment of pyelitis J M M WATTS with Nebraska State M J 9 212, 21

- Treatment of pyelonephritis by pelvic lavage M H JOSTEY New Orleans M & S J 9 212, 21
- Malignant papilloma of the kidney W E DARNALL and J KOSAR Am J Obst & Gynec 9 212, 21
- Primary squamous-cell carcinoma of the kidney as sequel of renal calculi H G WILSON Arch Surg 9 212, 21
- Renal extirpation in pyelitis R F WOLFFWITZ Semina med 9 212, 447
- A suppurative ureter with an abnormal orifice report of case W G H WATTS J Am M Ass 9 212, 21
- Incision in renal catheterization H A KRENNER, California Stat M J 9 212, 21 [49]
- The treatment of abnormal pain due to ureteral obstruction A J CHAZALL J Am M Ass 9 212, 21
- An experimental study of the ureter in nephrectomy report of clinical case of pyelitis R L LAYTON J Urol 9 212, 21

## Bladder, Urethra, and Penis

- A case of ectopia, case operated upon according to the method of Maydl Berlin I B. TITMANN Acta chirurg Scand 9 212, 21
- The action of benzyl benzoate and morphine on the esophageal sphincter W J S. T. J Urol 9 212, 21
- A new procedure for the formation of sphincter of the bladder J GOLDBLATT New York Arch 9 212, 21 [49]
- Food allergy cause of bladder pain W W H. Ann Clin Med 9 212, 21
- A rare form of inflammation of the urinary bladder suggesting neoplasia T CRIVELLO Pulchra Roma 9 212, 21
- Errors in the cystoscopic diagnosis of tumors of the bladder and contribution to the subject of esophageal cancer and erythema L KRENNER Arch 9 212, 21
- A case of inflammation of the urinary bladder in an 8-year-old girl I KRENNER Fortsch d Med 9 212, 21
- Concurrent calculus and diverticulum of the bladder J L CANNON and C B R. CANNON J Urol 9 212, 21
- Vertical papillonephrosis N G. Trif 2207 Arch 9 212, 21
- Pyelitis and carcinoma of the bladder probably of identical origin C J W. Trif et al. Acta de chir de Par 9 212, 21
- Pre-operative treatment of malignant tumors of the bladder by radium A J SCHULL and W F BRASCH Arch Surg 9 212, 21 [49]
- The end result of operations for cancer of the bladder W F LOWE Ann Surg 9 212, 21 [50]
- Gonorrheal injuries of the urethra and their treatment R M FORTWATTS New York Arch 9 212, 21 [51]
- The treatment of gonorrheal urethritis in the male A H. FORTWATTS Therap Gaz 9 212, 21
- Disease of the urethra and prostate cause of hematuria J FORTWATTS J Minnesota Stat M J 9 212, 21
- Genital Organ
- Hydrotomy of the site of the prostate H W FLAGG and R F CANNON J Urol 9 212, 21





- The sherry scar R H ELLIOT Arch Ophth 9  
b, 433
- Bilateral colobomata of the macula E R CHANDLER  
Brit M J 922, 14, 964
- Influence of trauma upon onset of interstitial keratitis  
T H BURTON Brit J Ophth 922, vi, 415 [55]
- Neuropathic keratitis the results of local infection  
J W CHANDLER Am J Ophth 922, v, 703
- Delineating keratotomy S R CURTIS Am J Ophth  
922, 697
- Embryonic chorovascular sheath of the crystalline lens  
E J LLOYD and M B LLOYD Am J Ophth 922,  
706
- Methods of determining astigmatism of the crystalline  
lens R C HERRINGHILL Ohio Stat M J 9 xviii,  
672
- Zonule protection in cataract extraction A E EWING  
J Am M Ass 922, 1892, 1
- Phacoceros I HARRINGTON Arch Ophth 922, h, 448
- Hypomesechisms to lens protein cataract operation  
F H VANDERBEEK and A V LINDGREN Am J Ophth  
922, 700
- Cataract extraction with iridotomy R P RAYMAKER  
Indian M Gaz 922 hvi, 137
- The pathology of cataracts S R CURTIS Arch Ophth  
9 2, h, 433
- The diagnostic use of the reveal pigment in myopia  
of the reveal tract A C WOODS Arch Ophth 922  
h, 442
- Cataracts, its etiology and treatment F J McCAN  
Rhode Island M J 922, 303
- Recurrent keratomycosis in the retina and vitreous of  
young persons method of examination W C FLETCHER  
J Am M Ass 9 2, 1892, 939
- Observations on the significance of retinal hemorrhages  
C O H WINTERBROOK Brit M J 922, 14, 495 [55]

## Ear

- Otolaryngology and the general practitioner G E  
SHAWMUTON Minnesota Med 922 526

- Deafness A G WILCOX Md Surgeon, 922, h, 20
- Prevention of deafness E AMBERO Grace Hosp  
Bull Detroit, 922, vi, 7
- The pathology and treatment of chronic catarrhal  
deafness P G GOLDENHART Laryngoscope, 922, xviii,  
696
- The origin of deafness in septic disease E PHILLIPS  
Arch f Ohren Nasen Kehlophk 922, cix,
- Is adult lip-reading worth while? A detailed study of  
66 cases G BERRY Laryngoscope, 9 2, xviii, 645
- Otic phlebitis without thrombosis B A KAMMALL  
Pennsylvania M J 9 2, xiv, 847
- Some phases of non suppurative otitis media J A  
BARRITT Laryngoscope, 922, xviii, 663
- Labyrinthitis secondary to suppurative otitis media  
G E FROTHINGHAM J Michigan State M Soc 922  
vii, 366
- The contraindication to the use of quinine and the  
sulphates in the treatment of diseases of the middle ear  
C E HANMER Colorado Med 922 xii, 85
- Colloidal silver iodide in the therapy of the ear nose  
and throat M F MCCARTHY Laryngoscope, 922  
xviii, 668
- A spontaneous otic pneumothorax of mastoid origin  
cured by operation L RIVINGTON and A WOODS Bull  
et memo Soc de chir de Par 922, xviii, 907
- The interpretation of mastoiditis in unusual cases H  
HAYS Am Med 922, xviii, 500
- A case of encephalitis lethargica complicated by double  
acute mastoiditis, with semicompanying transitory blind-  
ness R ALMOUD Laryngoscope, 922, xviii, 672
- The surgical treatment of chronic mastoiditis J A  
PETER J Labort, 922, xii, 434
- A new method of closing the eustachian tube at the  
radical mastoid operation V H PIERCE J Am M Ass  
922, 1892,
- Hypertrophy after mastoidectomy simulating brain abscess  
E M SCHWARTZ N York M J & Med Rec 922, civi,  
570
- A new paratonsillar incision H DICKSTEIN Laryngo-  
scope, 9 2, xviii, 694

## SURGERY OF THE NOSE, THROAT AND MOUTH

## Nose

- A foreign body in the nose, two cases of impaction of  
Buckner's style in the nasal fossa H JONES and A  
RYLAND Proc Roy Soc Med Lond 922 xv Sect  
Laryngol 5
- Intraosseous epiphora L SWERDLOW Med J  
9 730 [56]
- Polyps of the base of the skull W J W J REEDER  
Schreib d Gesellsch f Ohren Nase Nasenkrankh  
Petersburg, 1922 [54]
- Nasal headaches T L WARRER J Iowa Stat M  
Soc 922, 12, 170
- A contribution to the etiology of septic nose thrombosis  
A A SCHWARTZ Laryngoscope 9 2, xviii, 690
- A case of suppurative ethmoiditis complicated by orbital  
cellulitis and acute suppurative dacryocystitis W DRA  
Kewich M J 922, 12, 630
- The Turcher graft in the radical cure of frontal sinus  
and maxillary antrum diseases its further application to  
the nasal and gingival fistula J E SERRA Surg  
Gynec & Obst 9 2, xxv, 381
- The role of the antrum of Highmore as focus of infec-  
tion L C ROSSIGNOL J Med Ass Georgia, 9 22,  
365

- Primary epithelioma of the antrum of Highmore W W  
CARTER Am J Surg 922, xxvi, 296
- A new surgical procedure for the relief of depression of  
the nasal bridge and columella its further application for  
the relief of hump and deflected noses the plastic treat-  
ment of the epiphatic nose J E SERRA Laryngo-  
scope 9 2, xviii, 709
- A case of mesopharyngeal fibrosis involving the left  
maxillary antrum and side of the nose removed by Moore's  
lateral rhinotomy V KAYEN Proc Roy Soc Med  
Lond 922 xv Sect Laryngol 59
- A case of epidermoid epithelioma in the nasal fossa  
cured by means of the X rays alone. RUSSO and  
VOUGER Lyon chirurg 922, xii, 459

## Throat

- A rare bony tumor (compact osteoma) of the left tonsil  
H TELLEY Proc Roy Soc Med Lond 922, Sect  
Laryngol 43
- The roentgen ray in tonsillar disease F L LEBERER  
J Am M Ass 922, 1892, 30
- The treatment of tonsils by radiactions from radium salts  
instead of operation F H WILLIAMS Boston M & S J  
922, cxxxvii, 4 2

- Tonsillectomy. M. F. JONES. N. York State J. M. 92, xxii, 30.
- Tonsillectomy in the contagious diseases. E. H. PLACE. Boston M. & S. J. 922, clxxxv, 434.
- Indications for tonsillectomy in infancy and childhood in the modern tendency toward universal tonsillectomy justified? H. HANNA. Am. J. Dis. Child. 92, xxii, 204.
- The tonsillectomy stamp—the instrumental prevention of inspiratory postoperative pulmonary abscess. W. F. MOORE. Laryngoscope, 922, xxii, 686.
- Tonsillectomy stamp. W. F. MOORE. Laryngoscope 922, xxii, 692.
- The cause of severe bleeding following tonsillectomy—case report. A. D. H. WATTS. J. Lancet, 1922, ii, cliv, 440.
- Diphtheria following tonsillectomy. F. L. SECOY. Nebraska State M. J. 922, ii, 378.
- Three postmortem specimens of acute septic endemia of the larynx. E. D. D. DAVIS. Proc. Roy. Soc. Med. Lond. 9, xv, Sect. Laryngol. 56.
- Cartilaginous of the larynx with macerations. C. VIGOR. Ann. Arch. f. Otol. Nas. Kehlkopf. 922, clv, 77.
- Scleroma of the larynx and trachea. G. FORD. Arch. stat. d. chir. 9, 4.
- Pseudolaryngeal gonorrhea. L. L. VILLIERS. Rev. de med. y chir. 922, 79.
- Resection of the superior laryngeal nerve in tuberculous of the larynx. D. BLAZO. Tuberkulose, 92 [97].
- The removal of fibroma of the larynx by means of the Mackenzie forceps and nasal snare. E. D. D. DAVIS. Proc. Roy. Soc. Med. Lond. 9, xv, Sect. Laryngol. 56.
- Papilloma of the larynx. F. SPENCE. Proc. Roy. Soc. Med. Lond. 922, xv, Sect. Laryngol. 41.
- A solitary papilloma of the left vocal cord showing early carcinomatous transformation. E. A. PETERS. Proc. Roy. Soc. Med. Lond. 9, 2, xv, Sect. Laryngol. 6.
- Intrinsic epithelioma of the larynx shown after laryngo-
- my. S. TROSKOV. Proc. Roy. Soc. Med. Lond. 1922, Sect. Laryngol. 46.
- Plastic restoration of the laryngotracheal tube. C. SCHWART. Schweiz. med. Wchnsch. 9, 2, li, 139.
- Mouth.
- Oral diseases in pediatrics. S. A. COHEN. Am. J. Dis. Child. 9, 2, xxv, 60.
- The surgical treatment of complications arising from the first wisdom tooth. P. BLOCH and L. MONTZ. Neue wch. Ztg. 922, xxx, 9, 7.
- Infections and inflammations of the investing tissues of the teeth, gingivae, periodontal membrane, cementum, and alveolar process. H. A. POTTIS. J. Am. M. A. 1922, xxx, 9, 7.
- Salivary fistula: case report. S. G. DARTY. Lancet. M. J. 922, xx, 580.
- Carcinoma angiosarcoma of the tongue: report of case. E. H. FEN. J. Am. M. Ass. 922, lxxxv, 15.
- A case of circumscribed lymphangiosarcoma of the tongue. L. N. TAYLOR. Med. J. 922, 778.
- Observation of the orifice: inch permits after treatment of maxillary sinusitis by the alveolar route. H. G. RICHARDS. Rev. de med. y chir. 922, 800.
- Cancer of the mouth. J. C. RICHMOND. Northwest Med. 9, 2, xii, 280.
- Carcinoma of the maxillary antrum, Moore operation of lateral rhinotomy, recurrence, death. I. MOORE. Proc. Roy. Soc. Med. Lond. 922, xv, Sect. Laryngol. 33.
- Sarcoma (small-celled) of the right maxillary antrum. Moore operation of lateral rhinotomy (September, 1921), recurrence, pre-maxillary gland (March, 9, 7), biopsy of oral, right inner canthus (July, 9, 8), right breast and axilla (August, 9, 9), growth dispersed by radium. I. MOORE. Proc. Roy. Soc. Med. Lond. 9, 2, xv, Sect. Laryngol. 51.
- Malignant disease of the soft palate removed by simple extensive preliminary ligatures of the external carotid artery. A. KYLCO. Proc. Roy. Soc. Med. Lond. 19, 2, xv, Sect. Laryngol. 50.

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## CONTENTS

I. Index of Abstracts of Current Literature	iii
II. Authors	viii
III. Abstracts of Current Literature	73 130
IV. Bibliography of Current Literature	131 144

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# CONTENTS—FEBRUARY, 1923

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

- TAYLOR, F. B., TIER, W. I. and ALLEN, W. C.  
Improvements in Pre-Operative and Postoperative Care
- MAER, A.  
Postoperative Adhesions in the Abdominal Cavity
- CHUTE, A. B.  
A New Technique for Performing Perineal Prostatectomy
- WILKINSON, O.  
The Present Status of Squint Surgery: A New Operative Technique

##### Anesthesia

- ROSE, F. and ELLINGER, W.  
Why Is the Escaping Blood Dark Colored in Too Deep Narcosis
- BRENNER, J.  
The New Anesthesia Procedure of Gross and Wiedland

#### SURGERY OF THE HEAD AND NECK

##### Head

- FREEMAN, M. O.  
Surgical Operations on Gunshot Wounds of the Skull and Its Contents During the War 1914-1917
- LITTLE, H. I.  
Infection of the Tegmen and Lateral Sinus: Report of Nineteen Cases
- RIVINGTON, L. and WOLFE, O.  
Spontaneous Occipital Pneumatocele of Mastoid Origin: Operation, Recovery
- ROCALONZI, A.  
Infantilism of the Hypophyseal Type and the Argyll Robertson Sign Associated with Tumor of the Thalamus Part of the Third Ventricle Infiltrating the Optic Nerves But Not Involving the Infundibular or the Hypophyseal Regions
- SELMAN, S.  
A Case of Brain Abscess of Unusual Etiology
- PARKER, R.  
Reconstruction of the Inferior Maxillary Arch by Autoplasty
- DAVIS, W. B.  
Hardlip and Cleft Palate Deformities: Some of the Types and Their Operative Treatment
- VIAL, V.  
The Operative Treatment of Complete Double Hardlip
- PICKLER, H.  
A Large Operative Defect in the Pharynx Covered by Primary Transplantation of Skin Flaps
- WILKINSON, H.  
Injuries of the Visual Tracts of the Brain
- McINTYRE, L. L.  
Atypical Operations on the Jaw and Mouth for Malignant Growths

- BARNES, W. S.  
Cancer of the Tongue: Pitfalls in Diagnosis and Treatment

##### Neck

- TINLEY, M. B.  
The Desperate Risk Gutter

#### SURGERY OF THE CHEST

- Chest Wall and Breast
- BLOOMGOOD, J. C.  
Tumor of the Breast
- Heart and Vascular System
- MILLS, H. W.  
Hydatid Cysts of the Heart: with Report of Case
- DEW, WILKINSON, I. I.  
A Case of Suture of Puncture Wound of the Ascending Aorta
- Miscellaneous

- ARMSTRONG, E. H.  
Diaphragmatic Hernia—Non Traumatic: With Report of Four Original Cases

#### SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritoneum
- BEHLE, A. C.  
General Septic Peritonitis and Its Treatment
- Gastro-Intestinal Tract
- OLIVER, J. C.  
Hypertrophic Stenosis of the Pylorus
- GRAHAM, E. A.  
The Surgical Treatment of Syphilis of the Stomach
- SCUDGERS, C. L.  
Gastric and Duodenal Ulcer
- CHILE, G. W.  
Gastric and Duodenal Ulcer and Cancer
- PERMAN, E. I.  
Observations on the Histology and Healing of Gastric and Duodenal Ulcer
- VAN HOOK, W.  
The Problems and the Progress of Gastric Ulcer Surgery
- WOOLLEY, G.  
The Choice of Operation for Gastric Ulcer
- STENGEL, M.  
The Treatment of Callosus Gastric Ulcer by Transvaginal Extension by the Jannet Method
- PETERSON, E. W.  
Acute Intestinal Obstruction in Infancy and Childhood: A Brief Review of Fifty Five Cases
- O'CONNOR, J.  
Acute Intestinal Obstruction
- SMITH, R.  
Intestinal Foci of Infection

HILGENRATH, M. A. Two Cases of Rare Diseases of the Rectum

Liver Gall-Bladder Pancreas, and Spleen

DREIDMAN, J. G. The Bacteriology of the Gall-Bladder

GATWOOD and FORBES, P. H. Cholecystectomy from an Experimental Standpoint

DREIDMAN, E. Traumatic Pancreatitis

SOUTHERN, C. T. Case Report—A Large Pancreatic Cyst

#### Miscellaneous

CLUTE, H. M. Subphrenic Abscess

#### SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.

WUNDERLICH, A. Chronic Non-Suppurative Osteomyelitis in the Adult with Primary Total Necrosis of the Diaphysis

BARRIE, G. Haemorrhagic Osteomyelitis

MARCI, B. Primary Multiple Sarcomata of the Bones

RICHARDS, R. L. Periosteal Sarcoma in Association with Osteomyelitis. Report of Three Cases

ROTH, M. H. The Pathology of Tuberculosis of the Joints. A Study from the Clinical Standpoint

FOSTERER, H. A Muscle Angioma of the Deep Musculature of the Neck, the Rhomboides Minor Muscle

BRADLEY, W. R. Ossification Processes in the Crater of Ossification of the Tuberosity of the Tibia

HERRICK, P. A. Actinomycosis from the Scapular Standpoint

#### Fractures and Dislocations

MITCHELL, A. P. Ununited Fractures Due to War Injuries With End Results of Operative Treatment in 100 Cases

MICHELL, W. J. The Davis Method of Reduction of Congenital Dislocation of the Hip Joint

#### Surgery of the Bones, Joints, Muscles, Tendons, Etc.

BRADY, O. The Treatment of Acute Osteomyelitis

GALCILE, Osteotomy or Osteoclasis. Also Discussion of the Springer Operation

GOJARTSKI, I. A. The Surgical Treatment of Traumatic Pseudarthroses. I. New Methods of Operation

MONACO, A. Operative Measures to Heals Ankyloses

FRANKEL, J. The Origin and Treatment of Congenital Muscular Torticollis

HAMILTON, G. An Operation for Lengthening Bone

KNOFFELD, S. M. Experiments in Bone Transplantation

MASON, L. A Contribution to the Study of Bone Transplantation

#### SURGERY OF SPINAL COLUMN AND CORD

GORDON, C. The Diagnosis of Traumatic Diseases of the Spinal Column and Insufficiencia Vertebrae (Schuan)

BROWN, L. T. Reef Bone in Stabilizing Operations of the Spine

BONNEAU, A., LUCHEMITTE, J., and CORNILL, L. A Case of Complete Section of the Dorsal Cord by Direct Contusion. An Anatomico-Pathologic Study

STEWART, T. G. Some Observations on the Symptomatology of Spinal Trauma and Compression

ARMSTRONG, A. W. and OTT, W. O. The Results of the Removal of Tumors of the Spinal Cord

#### SURGERY OF THE NERVOUS SYSTEM

LEWIS, D. and MILLER, E. M. Peripheral Nerve Injuries Associated with Fractures

OTT, W. O. Experimental Results of Cable Grafts and Tubes of Fascia Lata in the Repair of Peripheral Nerve Defects

STOFFORD, J. S. B. The Resurfacing of Peripheral Nerves

LEWIS, E. A. On Solitary Fibrosarcoma of Peripheral Nerve Trunks, with Description of Case of Cystic Fibrosarcoma of the Median Nerve

GORDON, V. The Surgery of the Sympathetic Nervous System

#### MISCELLANEOUS

Clinical Experiences—General Physiological Conditions

KIRCH, E. Observations on Cystic Xanthomas Tumors and the Genesis of Xanthomas Tumors in General

SEA, MACHUGER, J. A. A Study in the Diagnosis of Cancer by Means of Serum Reactions

#### Scars, Vaccines, and Venereal

CHARR, O. M. and GARDNER, E. The Galvanic Excitability of Motor Nerves Following the Paravertebral Injection of Heterogeneous Serum

#### Blood

CONLEY, A. A Simple Procedure for Testing the Circulation in Gangrene of the Extremities

#### Blood and Lymph Vessels

MONROE, S. D. The Conservative Treatment of False Aneurysms

SEVIER, L. and BLUM, P. A Case of Arteriotomy for Embolism of the Axillary Artery Followed by Complete and Definite Recovery

#### Experimental Surgery and Surgical Anatomy

KIRCH, E. Parathion and Organ Transplantation

METZ, J. and IVY, A. C. Studies on Gastric and Duodenal Ulcer. The Relation of Lymphatic Flow to Gastric Ulcer—A Clinical and Experimental Study

- Röntgenology and Radium Therapy**  
 KIRKLEY, B. R. The Röntgenological Study of the Pathologic Gall Bladder 09  
 LAKE, E. S. The Treatment of Cancer of the Lap by Radiation 09  
 FRANKLIN, G. E. Cancer of the Lap Treated by Electrocoagulation and Radium  
 TADDESI, L. Carcinoma of the Tongue and Its Treatment with Radium

- FAIRER, O. T. Carcinoma of the Larynx Treated Locally with Radium Emulsions: A Clinical Report 1  
 BARKINGER, B. S. Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium 3  
 BURNHAM, C. F. The Results of Treatment of Carcinoma of the Cervix With Statistics and Technique 4

## GYNECOLOGY

## Uterus

- BURNHAM, C. F. The Results of Treatment of Carcinoma of the Cervix With Statistics and Technique 4  
 BREITENBECKER. Observations on Myoma and Accident 6  
 BOWLEY, V. Remarks on the Scope and Technique of Myomectomy 6  
 DE OTT, D. The Evolution of Hysteromyomectomy 16  
 FRANK, R. T. Cancer in the Cervical Stump, Metastases in the Vermiform Appendix

## Adnexal and Peri-Uterine Conditions

- BELL, W. B. Endometrioma and Endometriomyoma of the Ovary 7  
 DE BRYNE, F. The Clinical Results of Ovarian Grafting 7  
 DORLAND, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy Together with Study of Decidual Reaction Intra Uterine and Ectopic 7  
 External Genitalia  
 SMITH, R. R. Prolapse of the Female Urethra and Erosion of the External Urethral Orifice 8

## OBSTETRICS

## Pregnancy and Its Complications

- H. VIDEN, L. Bleeds During Pregnancy 9  
 SOLOVIEV, B. The Results of the Treatment of Eclampsia by the Dublin Method 9

## Labor and Its Complications

- FRICKE, A. V. Immediate Repair of Lacerations Versus Delay 9  
 D. VAN, F. P. The Uterus After Cesarean Section 10

## Puerperium and Its Complications

- LYNCH, F. W. Retroversions of the Uterus Following Delivery 10  
 Newborn  
 MURPHY, O. and DUNN, R. S. The Diagnosis and Treatment of Intracranial Hemorrhage in the Newborn: A Report of Fourteen Treated Cases 10  
 Miscellaneous  
 STEINBOCK, C. M. The Influence of the Placenta on the Mammary Gland

## GENITO URINARY SURGERY

## Adrenal, Kidney and Ureter

- ROVING, T. The Surgical Treatment of Nephritis and Acute Nephrosis  
 DARVALL, W. L. Malignant Papilloma of the Kidney

## Bladder, Urethra, and Penis

- FOOTNOTT, K. M. The Pathology and Treatment of Fibrocystoma of the Urinary Bladder

## Genital Organs

- BARKINGER, B. S. Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium 3  
 HARRIS, R. H. and THOMPSON, A. Carcinoma of the Prostate 3  
 CROFT, A. B. A New Technique for Performing Perineal Prostatectomy 3



## SURGERY OF THE EYE AND EAR

<b>Eye</b>		
WILKINSON, H. I. Jernes of the Vessel Tracts of the Bulb		37
WILKINSON, O. The Present Day Status of Squint Surgery A New Operative Technique	3	37
WOOD, D. J. Intra Ocular Cysticercus	36	
WOOD, D. J. Oxy. of Long Duration	35	
HANSEN, B. T. and HUNTER, F. H. The Early Development of the Corneal Tubercle A Study in Sit Lamp Microscopy	35	
	<b>Ear</b>	
	ETTER, E. The Correction of Prominent Ears	7

## SURGERY OF THE NOSE THROAT AND MOUTH

<b>Nose</b>		
DEAN, W. A Case of Suppurative Rhinoscleroma Complicated by Orbital Cellulitis and Acute Suppurative Dacryocystitis	38	
<b>Throat</b>		
FRANK, O. T. Carcinoma of the Larynx Treated Locally with Radium Emanations A Clinical Report		
<b>Mouth</b>		
PARTON, The Reconstruction of the Inferior Mandibular Arch by Autoplasty	76	
DON, W. B. Hardup and Cleft Palate Deformities Some of the Types and Their Operative Treatment	77	
	LEE, I. The Operative Treatment of Complete Double Hardup	77
	FRANK, H. A Large Operative Defect in the Pharynx Covered by Primary Transplantation of Skin Flaps	79
	LATH, E. S. Treatment of Cancer of the Lip by Radiation	89
	FRANK, O. E. Cancer of the Lip Treated by Letrococulation and Radiation	
	TOMAS, L. Carcinoma of the Tongue and Its Treatment with Radium	
	McARTHUR, L. L. Atypical Operations on the Jaw and Mouth for Malignant Lesions	88
	BARNARD, H. S. Cancer of the Tongue Pitfalls in Diagnosis and Treatment	89

## BIBLIOGRAPHY

## GENERAL SURGERY

## SURGICAL TECHNOLOGY

- Operative Surgery and Technique 3  
 Anesthetics 3  
 Surgical Instruments and Apparatus 3

## SURGERY OF THE HEAD AND NECK

- Head 3  
 Neck 3

## SURGERY OF THE CHEST

- Chest Wall and Breast 3  
 Trachea and Lungs 33  
 Heart and Vascular System 3  
 Pharynx and Esophagus 3  
 Miscellaneous 3

## SURGERY OF THE ABDOMEN

- Abdominal Wall and Peritoneum 33  
 Gastro-Intestinal Tract 33  
 Liver, Gall Bladder, Pancreas, and Spleen 34  
 Miscellaneous 35

## SURGERY OF THE EXTREMITIES

- Conditions of the Bones, Joints, Muscles, Tendon, Etc. 35  
 Fractures and Dislocations 36  
 Surgery of the Bones, Joints, Muscles, Tendons, Etc. 36  
 Orthopedics in General 36

## SURGERY OF THE SPINAL COLUMN AND CORD

- 36  
 SURGERY OF THE NERVOUS SYSTEM 37

## MISCELLANEOUS

- Clinical Experiments—General Physiological Conditions 37  
 Sera, Vaccines, and Ferments 37

- Blood 37  
 Blood and Lymph Vessels 38  
 Surgical Diagnosis, Pathology and Therapeutics 38  
 Experimental Surgery and Surgical Anatomy 38  
 Radio-genology and Radium Therapy 38  
 Industrial Surgery 39  
 Hospitals, Medical Education and History 40  
 Legal Medicine 40

## GYNECOLOGY

- Uterus 40  
 Adnexal and Peri Uterine Conditions 40  
 External Genitalia 40  
 Miscellaneous 40

## OBSTETRICS

- Pregnancy and Its Complications 4  
 Labor and Its Complications 14  
 Puerperium and Its Complications 4  
 Newborn 4  
 Miscellaneous 14

## ORBITO-URINARY SURGERY

- Adrenal, Kidney and Ureter 4  
 Bladder, Urethra, and Penis 14  
 Genital Organs 4  
 Miscellaneous 4

## SURGERY OF THE EYE AND EAR

- Eye 43  
 Ear 143

## SURGERY OF THE NOSE, THROAT AND MOUTH

- Nose 44  
 Throat 44  
 Mouth 44

## AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- |                        |                      |                    |                        |
|------------------------|----------------------|--------------------|------------------------|
| Adams, A. W. 3         | Drummond, J. G. 89   | Lam, L. S. 99      | Peppers, P. H. 90      |
| Alvarez, W. C. 73      | Dryden, E. 90        | Leah, E. J. 27     | Ravitch, L. 75         |
| Baustobridge, W. S. 29 | Dubandolad, J. I. 80 | Levin, D. 103      | Rhodes, R. L. 3        |
| Barric, G. 92          | Easer, E. 27         | Lhermitte, J. 91   | Rodhouse, A. 76        |
| Barringer, B. S. 3     | Edinger, J. 14       | Li, H. H. 74       | Rogers, M. H. 93       |
| Beckle, A. C. 8        | Eustis, K. S. 20     | Lueth, E. A. 95    | Ross, J. 74            |
| Behrendt, J. 14        | Ferguson, K. M. 11   | Lyack, F. W. 20    | Rovsing, T. 2          |
| Bell, W. B. 7          | Foster, H. 93        | Lyons, M. B. 27    | Sackler, C. L. 83      |
| Bloodgood, J. C. 80    | Fraser, J. 95        | Maack, B. 93       | Sacco, L. 97           |
| Brown, F. 107          | Frank, R. T. 6       | Major, A. 73       | Saw Blackstone, J. 100 |
| Bolander, A. 101       | Frazier, O. T. 2     | McArthur, L. L. 8  | Schert, S. 75          |
| Booney, V. 16          | Friedland, M. O. 74  | McCabe, J. J. 7    | Schick, R. 88          |
| Boulton, W. R. 94      | Gasper, E. 200       | McGee, E. R. 5     | Schick, R. R. 8        |
| Bradt, O. 97           | Gatewood, 90         | Merrill, W. J. 96  | Salomons, B. 19        |
| Bretschneider, 6       | Gaughey, 97          | Meyer, J. 98       | Saunders, C. T. 9      |
| Brown, L. T. 10        | Gierke, C. 20        | Michelson, L. 99   | Stratton, M. 87        |
| Burden, J. F. 95       | Goltschick, I. A. 97 | Miller, L. M. 103  | Stewart, T. O. 94      |
| Burnham, C. F. 4       | Gosson, V. 95        | Mills, H. W. 20    | Swenson, C. M.         |
| Cecil, A. B. 23        | Grubbs, E. A. 83     | Mitchell, A. P. 95 | Tennant, L.            |
| Charles, J. W. 27      | Haecker, B. T. 26    | Moscow, A. 24      | Taylor, F. B. 73       |
| Chen, U. M. 106        | Hawley, F. H. 26     | Moscow, S. D. 97   | Terry, W. I. 73        |
| Chute, H. M. 9         | Henderson, O. 99     | Moscow, D. 20      | Thompson, A. 23        |
| Correll, L. 104        | Henderson, L. 19     | O'Connor, J. 82    | Tucker, M. B. 70       |
| Coulter, A. 97         | Herbst, R. H. 3      | Obere, J. C. 8     | Vas, H. 20             |
| Cris, O. W. 83         | Herman, P. A. 95     | Ott, W. O. 1. 91   | Yess, V. 77            |
| Darrell, W. E.         | Hickman, M. A. 89    | Patterson, J. 91   | Wardman, H.            |
| Davis, L. P. 20        | Ivy, A. C. 24        | Pennock, E. 83     | Wardman, O. 23         |
| Davis, W. B. 77        | Jewell, L. H. 84     | Peterson, E. W. 87 | Wardman, A. 9          |
| Deane, W. 25           | Kirk, E. 24          | Pickler, O. E.     | Wood, D. J. 26         |
| De Bruyne, T. 7        | Kirklin, B. R. 99    | Pickler, J. L. 70  | Woolley, C. 26         |
| De Ott, D. 16          | Kropf, S. H. 99      | Pickler, A. V. 9   | Worner, C. 75          |
| Dorland, W. A. V. 7    | Kross, I. 97         |                    |                        |

# INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY 1923

## ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

### OPERATIVE SURGERY AND TECHNIQUE

Taylor F B Terry W I and Alvarez W C.  
*Improvements in Pre-Operative and Post-Operative Care* J Am Med Ass 9 Jan 578

I group of 2 patients, of whom 46 had had laparotomy and 65 an extra abdominal operation, the authors studied the incidence of pain and vomiting (1) those who had been purged before and after operation, (2) those who had not been purged before but had been purged shortly afterward, and (3) those who had not been purged before and who were given no enema or cathartic for at least four days after operation.

The omission of the pre-operative purge had no definite influence on the vomiting, but reduced the incidence of pain in abdominal cases from 75 to 4 per cent. Delay in giving the postoperative purge reduced the incidence of vomiting from 45 to 30 per cent in the abdominal cases and from 20 to 4 per cent in the others. In both groups there was more complaint of pain when the postoperative purges and enemata were withheld. Hence a number of patients will be more comfortable if given enemata as soon as they are needed to aid in the expulsion of gas.

The authors conclude that cathartics should be withheld for as long after operation as possible. Only patients not given purges or enemata for a day after operation have showed ill effects and several had spontaneous bowel movements. In the other cases an enemata the sixth day was effective.

WALTER C. BOSTER, M.D.

Mayer A. *Postoperative Adhesions in the Abdominal Cavity* (Ueber postoperative Adhäsionen in der Bauchhöhle) Zentralbl f Gynäk 91 Jan 490

(1) secondary laparotomies after gynecological operations showed the following result:

Of sixty cases of gynecological laparotomy fifty (83 per cent) showed adhesions and eight (13 per cent) showed no adhesions.

Of thirty seven cases operated on for the first time outside of the clinic, thirty-seven (100 per cent) showed adhesions, and of twenty three operated on for the first time in the clinic, fifteen (65 per cent) showed adhesions and eight (35 per cent) showed no adhesions.

The development of adhesions is dependent upon imperfect asepsis, incomplete hemostasis, and inaccurate peritonization of the stump. The author does not accept the theory that there is a predisposition to the formation of adhesions at certain periods of life, or that adhesions are favored by a peculiar constitution such, for example as the asthenic habitus of Stiller. A striking fact in the cases reviewed was that in those in which pregnancy occurred between the laparotomy there were no adhesions.

In addition to perfect asepsis, accurate hemostasis and good peritonization, the following factors have been suggested as of importance in the prevention of postoperative adhesions: (1) the avoidance of painting the abdominal walls with iodine, (2) the infusion of humanol and (3) the production of pneumoperitoneum. The close of the laparotomy. Mayer however has no objection to the use of iodine. With regard to the introduction of humanol he states that this has been done for many years, but decisive results have not been seen and adhesions are demonstrable. Subsequent examinations with pneumoperitoneum and roentgenography even when there was no complaint of their presence. The production of pneumoperitoneum at the end of the laparotomy as considered by Mayer but not carried out.

In conclusion, attention is called to the difficulty of the diagnosis. Frequently there are symptoms of adhesions in the absence of adhesions, but there may be also adhesions without symptoms. The importance of the demonstration of postoperative adhesions with the aid of pneumoperitoneum and the X-ray is brought out with the aid of six very instructive illustrations.

HANSEN (2)

## ANESTHESIA

Rost, F., and Ellinger: Why is the Escaping Blood Dark Colored in Too Deep Narcosis? (Weisbach mit bei zu tiefer Narcose das dunkelrothe Blut dunkel gefärbt?) *Munchen med Wchsch* 9 10 77

During operation under narcosis it is not very usual to see the blood suddenly turn dark, even when there is no obstruction to respiration. The authors studied this remarkable phenomenon experiments on cats and found that it is due to methemoglobin.

This methemoglobin could be demonstrated in pure ether narcosis, in chloroform narcosis, and in mixed hydrocarbon narcosis. Because of these findings the authors are inclined to attribute the occasional appearance of hemoglobinuria and the anemia observed after repeated narcosis to the breaking down of the red blood corpuscles with thrombosis in the internal organs. The formation of methemoglobin does not take place during narcosis of short duration even when comparatively large quantities

of anesthetic is used. Methemoglobin remains demonstrable in the blood for some time, but at the end of twenty-four hours has usually disappeared.

DAVIS (2)

Behrendt: The New Anesthesia Procedure of Gause and Wieland (Das neue Betäubungsverfahren nach Gause und Wieland) *Zentralbl f Gynäk* 9 11 4, 220

As claimed by Wieland, acetylene produces effects similar to those of laughing gas. Experience with it in 20 cases is reported. Acetylene mixed with oxygen is used. Anesthesia is produced in from one to five minutes and the waking occurs still more quickly. Unconsciousness, anesthesia, and relaxation of the abdominal wall are obtained with suitable mixture. The heart and respiration remain unaffected but the blood pressure rises somewhat. Salivation is prevented by morphine and scopalamine. Nausea does not develop. According to experience up to the present time, this anesthetic is harmless.

KUHLKAMPF (2)

## SURGERY OF THE HEAD AND NECK

## HEAD

Friedland, M. O.: Surgical Operations on Gunshot Wounds of the Skull and Its Contents During the War 1914-1917 (Ueber chirurgische Eingriffe bei Schussverletzungen des Schädels und seinem Inhalt nach den Kriegserfahrungen 9 4-9 7) *Arch Med J* 92 9

A series of sixty cases of penetrating gunshot wounds of the skull are reported, thirty-eight of which were operated upon by the author and twenty-two by other surgeons. An exploratory incision is indicated in every case of uncertain diagnosis if the bone is found to be intact, nothing further should be done. Small splinters of the lamina vitrea heal in smoothly in the presence of an intact external layer of bone.

When there are fissures penetrating the entire thickness of the bone, exploratory trephining is indicated. One or two trephine openings 3 to 4 mm in diameter make possible the examination of the lamina vitrea, the dura, and the subdural space (hematomata). If necessary the trephine opening may be enlarged with chisel.

In encephalitis and suppurative meningitis the trephine openings must be large. In ten cases of encephalitis and meningitis-encephalitis there were seven deaths. The clinical picture of acute suppurative encephalitis is very typical. After comparatively long period of well being protrusion of the brain occurs with high temperature and slowing of the pulse. The necrotic masses are then thrown off and the general condition improves, but after several weeks there is an aggravation of the condition, the high temperature and slowing of the pulse return, the protrusion enlarges, necrotic

tion occurs in the center and parenchyma develops. This is then followed by improvement and again by aggravation, the protrusion of the brain increases, rigidity, convulsions, and coma and death occurring after three to five recurrences. The foreign body is frequently the cause of the progressive encephalitis.

Of twenty-two patients, eleven recovered, three were benefited, and eight died. According to the statistics regarding operations on persons with injuries of the head, forty-three died on the battle field, forty-eight died in hospitals along the line of evacuation, two died in the reserve hospitals and only seven survived.

GRIGORY (2)

LIDDE, H. L.: Infection of the Sigmoid and Lateral Sinus. Report of Nineteen Cases. *Surg Gynec & Obst* 9 22 4, 8

The author reports a series of nineteen cases of infection of the sigmoid and lateral sinus observed at the Mayo Clinic during the past five years. These were selected from a series of more than 500 cases of mastoid disease in which operations as performed on more than 50,000 mastoid disease cases examined in the Ear, Nose, and Throat Section. The patients have been divided for discussion into four groups.

Group I. Patients with involvement of the sigmoid sinus by phlebitis or non-obliterating thrombosis.

The jugular vein was not operated on primarily in any of the eight cases in this group. In three cases subsequent ligation was necessary because of the patient's condition.

The leucocyte count was relatively high except in three cases, in two, the condition was really less serious. One patient was extremely ill and had a

very virulent infection of the blood stream due to hemolytic streptococcus.

Blood cultures were positive in four cases while one, that of patient most critically ill, cultures were repeatedly negative. In two patients were infected with the same organism and no regular interval elapsed before the blood culture became negative.

The temperature was fairly typical of sepsis in five cases, and in three the patient was almost afebrile.

Choked disc occurred in three cases, being probably the result of general toxemia. Blood transfusion was used in three cases as supportive measure.

The patients who were most critically ill had phlebitis without thrombosis.

**Group 2.** Patients with obliterating thrombosis. Of the seven patients in this group primary operation was performed on the vein in two because bleeding did not occur from the bulb end of the sinus. In three cases the operation was performed on the vein secondarily because symptoms and signs of sepsis developed during the postoperative course and the second operation bleeding did not occur from the bulb end. In one case the disturbance may not have been recognized at the primary operation. In the other two it may have resulted from injury to the sinus wall. In two cases, in which the vein was not disturbed, the patient had an uneventful convalescence. The blood counts are not high even in the presence of infection in the blood. The patient's general appearance seemed to be the best index of his condition.

In six cases the blood cultures were positive in one case no culture was made. The pulse to were all affected with different organisms. The temperature curve was quite characteristic in four cases, and in one it was definitely misleading. The patients are early afebrile. Choked disc occurred in one case. This patient, as given transfusion because of low hemoglobin and the effect was immediately beneficial. In general, it may be said that the patients in this group were not so extremely ill as those in Group 1. No case was the extremities

**Group 3.** Patients who died without submitting to operation. The two patients in this group were so extremely ill and the infection was so overwhelming that operation was not attempted. A septic sore throat in one case made it difficult to determine the true source of the sepsis even in the presence of the ear suppuration. The other patient became mentally disturbed. The soft parts discolored when handled, and the site of the needle puncture for the blood culture began to slough in twenty-four hours.

**Group 4.** Patients who died and in whom the disease was not recognized clinically. Of the two patients in this group one showed the result of apoplexy, operation having been delayed too long. The ear was examined ten days before death and the history was typical, but sinus infection was

not suspected because the patient was an extremity. After the patient had died the home physician gave the history of previous chills and high fever. The injected guinea pig died of military tuberculosis. The patient's blood was positive for hemolytic streptococcus.

The other patient had thrombosis of the straight sinus which probably accounted for symptoms suggesting brain abscess. Headache, drowsiness, and mental apathy may be caused by circulatory changes secondary to thrombosis of the straight sinus.

The three draw the following conclusions with regard to the treatment of involvement of the jugular and lateral sinuses.

Patients should be treated individually rather than by one routine surgical procedure.

Primary operation on the jugular vein is not indicated unless bleeding does not occur from the lower end of the sinus.

The operation on the vein may be safely delayed if both ends of the sinus bleed freely. In none of the cases was the vein resected.

Too much dependence must not be placed on laboratory findings. The patient's general appearance is a fairly reliable index of his condition.

Blood transfusion by the citrate method, with care to group the patient properly is a valuable supportive measure.

Unnecessary handling and examination should be avoided as they may interfere with convalescence.

Forced feeding, quiet pleasant surroundings, and cheerful nursing are important factors.

Patients with lung complications may recover.

Thrombosis of the straight sinus may cause symptoms and signs of brain abscess.

The prognosis may be regarded as fairly good if well directed measures and timely surgical interference are employed. F. H. HAMMILL, M.D.

Reverchon L. and Worma, G. Spontaneous Occipital Pneumocele of Mastoid Origin. Operation; Recovery. (*Pneumocele occipitale spontané d'origine mastoïdienne. opération guérison*). *Bull. et mem. Soc. d'hist. de Par.* 9, 1910, 907.

The author's case was that of a soldier aged 25 years who had depressed the size of fifty-cent piece in the right occipital region. Complaint was made of headache which began about six months after slight fall on the head without immediate serious results. A few months later the depression gave place to tumefaction which increased slowly to the size of mandarin orange. The swelling showed no signs of inflammation and was clearly an air cyst. It increased in size on effort and could be reduced by pressure. The X-ray examination showed the entire mastoid region to be filled with air. The vascular aspect was continued also over considerable extent of the conchal and the petrous portions of the temporal bone and the parietal and occipital bones. The mastoid on the opposite side showed similar cavities.

A large incision was made over the tumor and an osteoplastic operation filling the osseous breach the osteoplastic fragments was done. The bottom of the cavity was formed by the internal table which was very irregular. The air collection was clearly subperiosteal. A tunnel communicating with the mastoid cavity was found.

In the authors opinion there had been spontaneous dehiscence of the external table which was thinned by the process of pneumatization and distended mechanically. The part played by the patient's fall on his head is problematic. The process was exclusively intra osseous and probably connected with some defect in development. The pneumatization of the mastoid was probably the direct cause of the pneumatocele.

Auray collected fifteen cases of frontal, and thirteen cases of mastoid, pneumatocele. The authors find that to date, including their own case, only twenty-nine cases of mastoid pneumatocele have been reported.

W. A. BRESNAH.

**Rickdahl, A.** Infantileism of the Hypophyseal Type and the Argyll-Robertson Sign Associated with Tumor of the Thalamus Part of the Third Ventricle Infiltrating the Optic Nerves But Not Involving the Infundibular or the Hypophyseal Regions (*Infantilisme du type hypophysaire et signe d'Argyll Robertson avec tumeur développée au niveau de la partie thalamique du troisième ventricule et infiltrant les nerfs optiques, mais envahissant pas la région de l'infundibulum ni l'hypophyse*). *Bull et mem Soc med et chir de Par* 9, 214, 23.

The case reported by Rickdahl again raises the question regarding the symptoms which must be attributed to functional disturbances of the hypophysis and the infundibular region. The patient was a boy of 8 years with infantileism of the hypophyseal type and diabetes insipidus. Growth had been arrested since the thirteenth year and for the past 6 years there had been intense thirst. Constant polydipsia was associated with the daily elimination of from 500 to 4,000 ccm of urine. The only eye sign was the Argyll-Robertson pupil. Constant intense headache, predominantly occipital, as associated with vomiting. Death resulted. Lumbal puncture on the day of death showed that the cerebrospinal fluid contained urea, albumin, and lymphocytes. Polyuria persisted to the end.

At autopsy tumor adherent to the lateral walls was found in the superior thalamic part of the third ventricle. The growth reached its maximum in the optic layers, especially the right. Histologically the tumor was round celled sarcoma or perhaps gliosarcoma.

The hypophysis as found to be macroscopically normal histologically there was no trace of neoplastic infiltration but there were some slight hemorrhagic and lymphocyte invasion in the posterior lobe, especially in the central part. The pars intermedia, the stalk of the hypophysis and the infundibular region showed no changes.

Pressure from the tumor was exerted upon the trigone and the corpus callosum. The diabetes insipidus might have been the result of the secondary and indirect lesions of the posterior lobe of the hypophysis or of compression of the infundibulum consequent to disturbance of the circulation or ectricity by drops.

The arrest of development establishes once again the fact that so-called hypophyseal disturbances may occur without any direct participation of the hypophysis itself and with very diverse encephalic localizations of neoplasms, although usually the latter are di-encephalo-mesencephalic. The anterior lobe of the hypophysis showed very little involvement.

The Argyll-Robertson sign in this case was quite independent of syphilis, all tests for this condition being negative.

W. A. BRESNAH.

**Silbert, R.** A Case of Brain Abscess of Occipital Etiology. *J Am M Ass* 9, 2, 1202, 1217.

Silbert reports a case of brain abscess resulting from the direct introduction of a selected foreign body into the brain.

Six weeks before his admission to the hospital, the subject, a boy aged 6 years, stumbled and fell on a stick. The resulting wound on the left side of the face became infected and discharged considerable pus but healed in eight days. Four weeks before he entered the hospital the child began to complain of headache and had some fever. Three days before his admission the headache became so severe and the fever so high that he was put to bed. He then became delirious. When he was brought to the hospital he was in moribund condition. His head was retracted and there was marked opisthotonos. The right pupil was as large as the left, and both reacted sluggishly to light. There was marked stiffness of the neck and bilateral herring sign.

Autopsy showed a small, firmly healed wound about 1 cm in length on the left side of the face mid-way between the outer angle of the orbit and the external auditory meatus. On removal of the skull cap and reflection of the dura, the surface of the brain was found to be covered by thick purulent exudate. The left temporal lobe showed marked flattening of the gyri, and fluctuation as noted on palpation. Under this area was a large abscess cavity filled with thick purulent material. The dura overlying the abscess showed perforation, and probe introduced into this opening led directly through similar perforation in the squamous portion of the temporal bone to an incision under the temporal muscle. In this tract several splinters of wood were found.

H. A. McKENZIE, M.D.

**Fertach.** The Reconstruction of the Inferior Maxillary Arch by Autoplasty (*Wiederherstellung des Kieferbogens durch Autoplastik*). *Zentralbl f Chir* 9, 219, 240.

The peculiar anatomical relationships of the inferior maxillary arch make healing difficult. As com-

pared with the peg method and the interpolation method Partsch believes the graft method with splitting open of the fractured ends is safer and more convenient because in the most varied positions of the fractured ends it makes possible the approximation of freshly bleeding bone surfaces, a condition favoring rapid agglutination and healing if chips from the crest of the ilium are used in the implantation.

In fifty-five of seventy-six cases operated upon complete healing in of the implant occurred. The numerous cases re-examined after several years demonstrated that the implant grows and unites completely with the arch of the inferior maxilla. A transplant examined histologically at the end of three weeks showed no regressive changes and presented fresh bony sprouts over its entire surface.

VALENTIN (CZ)

Davis, W. B. Harelip and Cleft Palate Deformities. Some of the Types and Their Operative Treatment. *Ann Surg* 9: 187, 11.

Complete and incomplete unilateral harelip generally require the same plan of treatment. In the latter there is usually very little or no muscle tissue between the upper angle of the cleft and the floor of the nostril. Incomplete clefts are corrected into complete clefts.

In outlining measures for the correction of harelip the method devised by Thompson has been found the most satisfactory. With sharp-pointed calipers the distance is measured from the mid point of the floor of the nostril to approximately the point in the same sagittal plane to which the free margin of the lip would come if it were normal. The upper point of the calipers being kept in place, the lower is rotated laterally to the vermilion border where a mark is made on each side. Incisions carried through the entire thickness of the lip at right angle to the skin surface and following the lines outlined will give surfaces for approximation. Before approximating the margins the upper lateral portions of the lip should be freed from the maxilla.

In complete single harelip and cleft palate cases the lip and alveolar cleft should be operated on first, usually between the tenth day and the third month. The cleft palate may be closed between the fifth and the twentieth months.

A wide alveolar cleft is repaired by partially dividing the buccal side of the alveolar process, just posterior to the canine region on the opposite side. A greenstick fracture is then produced and the edges of the cleft are brought together after they have been denuded of mucous membrane. The margins are held by means of silver wire.

Closure of the remaining cleft of the palate is done by the Langenbeck mucoperiosteal flap-lifting method. An additional flap may be taken from the lower edge of the vomer if necessary. The margins of the flaps are approximated with interrupted sutures of No. 00 wire, as far back as the soft palate where one on each side mattress is used. The remaining part is closed with black silk.



Application of the Thompson method of determining the points for the lines of incision for the correction of harelip.

In bilateral harelip cases the wide separation of the margins necessitates more extensive freeing of the lip from the alveolar process. Stay sutures of silk worm gut are used to elieve tension.

Incomplete union in the hard palate may be repaired by any one of three methods: (1) by making lateral incisions just within the alveolar process on each side, loosening the flaps, and approximating them in the midline as in the Langenbeck operation; (2) by the Lane flap method; or (3) by bringing part of the horizontal processes of the maxilla and palatal bones medially with their attached soft tissues.

FARMER E. HARVEY, M.D.

Veau, V. Operative Treatment of Complete Double Harelip. *Ann Surg* 9: 233, 1891, 243.

The author reports a series of thirty-five cases of complete double harelip operated upon for the first time or retouched.

The premaxilla should not be excised as its preservation gives a projection to the upper lip. Veau operates first upon the lip, correcting the palate later. He closes the lip by two operations, first by pulling back the premaxilla, and second, by suturing the soft parts. The premaxilla is operated on at the age of two or three months and the lip is sewed on or two months later. The palate may be closed during the second year.

In the first operation the septum obstructs the pulling back but the projection of the nose depends upon its integrity. An incision about 3 cm long is made behind the premaxilla along the lower edge of the septum and the pericardium elevated. A wedge of bone is removed with the forceps as shown in Fig. 1 and the premaxilla displaced downward and back.

The lateral edges of the premaxilla should be trimmed off before the displacement is effected. It is fixed into position by means of silver threads passed into the maxilla and the premaxilla on each side. In bringing parts of the lip together, complete restoration is not attempted, the object being only to form a bond of the soft parts in front of



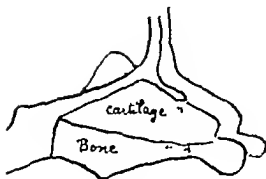


Fig. 1. Specimen of three months-old child with complete double harelip.



Fig. 3. Suture of the alia completed.

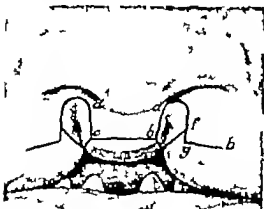


Fig. 2. Second operation. The skin incisions.

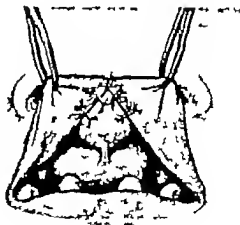


Fig. 4. Suture of the mucous membrane. Note the mucosa in which the platyform is included in the suture.

the drawn-back premaxilla. This means of fixing the premaxilla is much more important than the deep ligation with the silver threads. The two mucocutaneous edges are freshened and the skin is sutured. One large tension suture is put on the under surface.

The restoration of the lip is done in two operations. The qualities of a well restored lip are (1) suppression of the cutaneous parts, (2) rectangular mucocutaneous lines, (3) vitality of the muscles or philtrum to insure the continuity of the orbicular, (4) projection of the mucosa without a notch in its lower edge, and (5) normal contour.

In the reconstruction of the lip the skin, muscle and mucosa must be taken into consideration.

The incision in the skin should be  $\frac{1}{2}$  inch from the mucosa to avoid the piece of mucous membrane that remains. The lip is nearly  $\frac{1}{2}$  inch too high because subsequently the atrophied philtrum becomes larger.

The muscles should be brought together carefully to give suppleness to the lip.

The chief fault of the classical operation for the repair of the mucous membrane is removal of the mucosa of the philtrum. It is the lack of mucous membrane that causes flattening of the lip.

The technique of raising the skin incision is shown in Fig. The line  $c-d$  is treated with great care. It passes  $\frac{1}{2}$  inch from the mucous membrane part and only through the skin. The angles  $b$  and  $e$  are very clearly cut right angles.

At the level of the lower edge of the philtrum all of the muscle is conserved.

The cutting of the lateral part is done in the line  $f-g$  which includes all of the mucous membrane and about 2 mm. of skin. It must be perpendicular to the direction of the lip. The incision will include the inner and outer mucous membrane.

When the bistoury arrives at the  $f$  it makes the line  $f-g$  which is 3 mm. long. This approaches the mucocutaneous line, but does not cut it.

The line  $g-h$  is drawn obliquely in leaving the mucous membrane.

The part included between the points  $b-f$  is removed with care to penetrate into the nostril in order to diminish the protruding of the nose. The result after the skin has been sutured is shown in Fig. 3.

In suturing the muscles the finest catgut or vasculature silk is employed in the skin. In sewing the mucous membrane the finest horsehair is used.

The lower part of the philtrum which is situated behind, must be sewed as shown in Fig. 4.

FRANCIS H. HANKEE, M.D.

Pickler H. A Large Operative Defect in the Pharynx Covered by Primary Transplantation of Skin Flaps (Grosser operativer Defekt im Rachen durch primäre Transplantation von Oberlippenlappchen gedeckt.) *Zeitschrift für Chirurgie* 9, 1907.

After removal, by  $\frac{1}{2}$  inch of the mouth, of squamous celled epithelium involving the left half of the

soft palate, the tonsil, and the left base of the tongue the lower part of the wound in the region of the tongue was covered by Thiersch graft taken from the inner side of the upper arm. The flap was pressed into place by means of a rubber upper dental plate and a lump of dental compound to which it had been made fast with mastix so that its wound surface on the outside.

Healing was uncomplicated, and at the end of four days the grafts had healed in over almost all of the wound. This procedure which Pickler applied to the soft palate in two previous cases, is based on the conversion of the flat wound, in which the fixation of Thiersch flaps is impossible, the mouth into a cavity wound. KNOX (7)

### NECK

Tinker M. B. The Desperate Risk Goller. *J. Am. M. Ass.* 9, 1914, 79.

This report is based on 1,000 cases selected from a series of 1,318 which were under observation from May 9, 1914, to May 31, 1915.

The author has found that persons with obstinate gastro-intestinal symptoms, hypertension, and myocardial insufficiency are especially desperate risks. When nausea and vomiting apparently resulted from thyroiditis alone and resisted treatment, the patient died. These cases are relatively rare but Tinker has seen four. For the past ten years he has not operated on cases with marked gastro-intestinal symptoms. He does not consider it as favorable for operation any patient with hypertension whose pressure cannot be reduced thirty points, and he has not operated on any with pressure over 100. Preliminary medical treatment is of greatest importance in these cases and local anesthesia is safest for operation. In cases with myocardial insufficiency digitalis should be pushed to effect. This, with general care usually brings such improvement that operation is comparatively safe. Glycosuria with hyperthyroidism is a serious combination. When it is possible to get the patient sugar free he progresses extremely well after thyroidectomy and frequently remains sugar free without very strict diet.

Local anesthesia is indispensable in the removal of goiters causing obstruction to respiration. The author does not accept the statement that any case of malignancy of the thyroid which is so far advanced that diagnosis is possible is hopeless for operation. Two of his cases of this type have remained cured one eight years and one more than ten years after the excision of extensive malignant processes involving the great vessel sheath, the larynx and the trachea as well as the thyroid.

In conjunction with the metabolic rat and tachycardia Tinker attaches considerable importance to lymphocytes in determining the risk in doubtful cases. He advocates preliminary ligation and in the cases of extremely toxic patients he comes to operation side awake in spite of preliminary preparation with morphine, scopolamine, the elimination of the

psychic element by light nitrous oxide-oxygen anaesthesia combined with local anaesthesia. The many stage operation which can be stopped and the wound packed with gauze whenever there is doubt as to

whether it can be safely completed is not ideal, but all save life in desperate cases. Tinker does not advocate the use of radium or the X-ray in the treatment of hyperthyroidism. S. J. SARGENT, M.D.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

Bloodgood, J. C.: Tumors of the Breast. *Northeast Med.* 972, 220, 221

After thirty years of investigation the author finds tumors of the breast as fertile a field for study as ever. The problems are (1) to give the patient with cancer the best chance of cure, (2) to save the breast in cases of benign tumor, and (3) to determine the cases in which operation is contra indicated entirely. Formerly Bloodgood felt that he was confronted with a diagnosis which called for no operative interference in less than 1 per cent of breast cases but today finds operation indicated in only 50 per cent of cases. Thirty years ago majority of cases had a definite lump and in 90 per cent the lump was malignant.

A discharge of blood from the nipple is not of itself a sign of cancer and the breast should not be removed because of this symptom alone. Pain in the breast is not a sign of cancer when it is unassociated with other evidence.

Lactation leaves its effect on the breast in dimples which may be mistaken for evidence of cancer. A small tumor which is visible in a moderately normal breast is usually malignant. The average breast is lumpy. It is most lumpy at puberty and very lumpy during pregnancy.

In surgical exploration of a tumor the author cuts down on the tumor instead of excising it. In doubtful cases the diagnosis must be made at the time of operation by inspection and frozen section. The working rule when there is doubt as to the character of a tumor is to do the complete operation for cancer. In cases of blue dome cyst the cyst alone should be excised as in cutting out other cysts and dilated ducts are encountered. Failure to find palpable lump easily when cutting down is suggestive of malignancy. S. J. SARGENT, M.D.

### HEART AND VASCULAR SYSTEM

Mills, H. W.: Hydatid Cysts of the Heart with Report of a Case. *Surg. Gynec. & Obst.* 922, 453

The case reported was that of a woman 36 years of age who was found dead. Autopsy revealed a hydatid cyst of the right ventricle 5 cm. in diameter which showed the typical laminated cyst wall. No daughter cysts or scolices were found. In the substance of the right lung on the inner side of the lower lobe were four cysts the size of walnuts. The left lung was normal.

A primary hydatid cyst of the heart is formed by an embryo which has surmounted both the hepatic and pulmonary defences. Because of its location this cyst ruptures early. The primary rupture is usually not fatal and passes unnoticed. Secondary metastases in the lungs or brain result from flooding of the venous or arterial circulation with hydatid sand, embryo capsules and scolices. Hydatid cyst of the heart has never been diagnosed during life. H. A. McKENNA, M.D.

Daherwald, J. L.: A Case of Suture of a Puncture Wound of the Ascending Aorta (Ein Fall von Naht einer Durchdringung der Aorta ascendens). *Monatsh. Chir.* 9

The author's case represents the first operation for puncture wound of the ascending aorta.

The patient, laborer 30 years of age, was brought into the hospital in an intoxicated condition. On large number of incised wounds on various parts of his body. His pulse was 9. The heart boundaries and dull areas are normal. There was no pleurothorax or hemothorax.

The wounds on the temple and wrist are sutured. At the left of the sternum at the level of the first intercostal space and the second rib, was a wound 3 cm. long. When this was held open, 3 cm. bleeding wound of the sternum was exposed.

The patient's condition grew progressively worse. One hour after admission, peculiar sound was heard on auscultation of the heart, respiration was disturbed, and there was tympanic sound at the site of cardiac dullness. Signs of accumulation of blood and air in the pericardium are noted which suggested rupture of blood vessel within the pericardium. The site of the external wound indicated an injury of the ascending aorta, the pulmonary artery, or the heart.

The patient was operated upon under ether anesthesia eight hours after the injury. The wound was enlarged down and to the left with the formation of skin and muscle flap and the resection of pieces of cartilage from the second and third ribs and of pieces of the sternum. The layers of the pleura, which were uninjured, are pressed close with blunt instrument. The wound as found to penetrate the fatty tissue of the mediastinum. When the pericardium is split lengthwise blood, bubbles, air and froth are evacuated. The right atrium and the site of emergence of the aorta were then exposed on the right the pulmonary artery was visible. On the anterior surface of the aorta, 1 cm. from the heart, and situated at an angle to the longitudinal axis of the aorta was a wound

8 mm long from which blood flowed in thin stream. When the second suture was attempted there occurred from the puncture channel heavy bleeding which could not be stopped by tamponade for two minutes and led to the formation of a hematoma under the adventitia. Two more button sutures, which included the hematoma, caused complete hemostasis. The sutures in the aorta held well. The pericardium was washed out and sutured. Uneventful healing followed. During the first few days following the operation the temperature went up to 38.1 degrees C. The pulse was 60-64. At the end of four weeks the patient was discharged cured.

The author refers to the work of Perthes published in 1897 in which were cited twelve cases of wounds of the aorta not followed immediately by death. He considers it both possible and necessary however to treat wounds of the aorta at once. He points out the difficulty in diagnosing this type of injury as well as injuries of the heart, and states that only the situation of the external wound, the peculiar sound, the progressive deterioration of the patient's general health, and the respiratory difficulty in the absence of signs of injury to the lungs, led him to suspect an injury to the organs within the pericardium and to operate.

In the exposure of the heart the author found progressive widening of the channel of the wound with resection of the ribs and of as much of the sternum as necessary. On the basis of five cases of cardiac injury on which he operated with favorable results, he recommends complete closure of the pericardium and the pleura, if possible, an extrapleural operation should be done.

In the case of injury to the aorta which is reported there were a number of circumstances which favored a good result. The wound was small and partly protected by thrombus which prevented severe bleeding, the sutures held well, and an extrapleural operation was possible. SCHAEFER (22)

### MISCELLANEOUS

Kessler, L. H. Diaphragmatic Hernia—Non Traumatic With Report of Four Original Cases. *J. Missouri State M. Assn.* 9: 111, 46

Congenital diaphragmatic hernia is infrequent. Its clinical history may so simulate that of other conditions that it may not be diagnosed during life. Imperfect development is probably the primary factor.

The hernial opening may be at any point in the diaphragm. The author had two cases with abnormally large openings for the esophagus and two cases with openings through the dome of the dia-

phragm. Cases have been reported also in which the opening was in the right or left side of the diaphragm.

Pain is usually present in the chest. The percussion note is resonant and the breath sounds are absent. There may be dyspnea, regurgitation of food, or vomiting. Gastrointestinal symptoms may be absent. The chest shows no change in appearance.

The hernia may become partially strangulated. Viscera may pass in to and out of the thoracic cavity. The condition is not fatal unless strangulation occurs. The X-ray is the important factor in the diagnosis.

Few cases are found in the literature. The author reviews those reported during recent years. Most of them were diagnosed by the X-ray or at postmortem examination.

Case 1. A man, aged 7 years, had always been troubled with shortness of breath. This was especially noticeable after eating. A feeling of oppression or of pain in the epigastric region followed heavy meal or the drinking of a large quantity of fluid. There was no history or sign of injury. The chest and abdomen appeared normal. The breath sounds were absent in the lower left chest. The condition was diagnosed as pneumothorax. X-ray examination showed an enlarged esophageal opening in the diaphragm and the presence of about half of the stomach in the chest.

Case 2. The patient was a man 9 years of age who complained of shortness of breath and irregular heart action with pain which was brought on by exertion and heavy meals. There was no history or sign of injury. The chest and abdomen appeared normal. X-ray examination showed displacement of the heart toward the right, the presence of about one fourth of the stomach in the chest, and an opening in the diaphragm in front of the esophagus.

Case 3. A man, aged 49 years, complained of feeling of fullness and occasionally an acute pain in the epigastrum after meals. The attacks of pain were associated with marked dyspnea. Vomiting usually gave relief. There was no history of injury. X-ray examination showed one half the stomach in the chest.

Case 4. The patient, a woman, aged 6 years for many years had had feeling of fullness after eating and retrosternal pain which was relieved by vomiting. The first meal of the day seemed to cause the most severe pain. X-ray examination showed that the stomach had entered the chest through the esophageal opening. Under the fluoroscope the hernium first appeared above the diaphragm and caused acute distress. It then began to pass below the diaphragm, taking the stomach with it. Twenty minutes the stomach was in its normal position. Two years after the operation the patient was still in good health. WALTER C. BUCKLEY, M.D.

## SURGERY OF THE ABDOMEN

## ABDOMINAL WALL AND PERITONEUM

Behle A. C. General Septic Peritonitis and Its Treatment. *Westcott Med* 9 2, 22, 36

The author quotes statistics to show that there has been a steady reduction in the mortality of general septic peritonitis.

In the treatment either may be used as a cleansing agent. Its beneficial results depend, not upon an antiseptic effect, but probably upon an irritating action which, according to Dubé, causes hyperæmia, increases peristalsis, and exerts a general tonic action.

Complicated oil has been infected with the idea of preventing rapid absorption.

In Willis' opinion ascites is not an important factor in peritonitis. It therefore opposes routine alkaline therapy.

Fromme and Finkelstein believe that the first bacteria taken up by the lymph cause coagulation and block further passage of bacteria and lymph. Hence intestinal nourishment does not enter the blood vessels, and rapid exhaustion, dryness of the tongue and great thirst result. These conditions are combated by the administration of fluid.

Holton states that contractions of the diaphragm with concomitant changes in the abdominal and thoracic pressure of the lymph flow. Therefore posture and dress affecting respiration and the diaphragm are of importance.

Koch regards the omentum as important in the removal of exudate, forming, and absorbing agent. The exudate is protective and possesses bactericidal properties.

In gonococcal peritonitis associated with tubal infection operation is contra-indicated.

The author contrasts present day treatment with that of twenty-seven years ago. Formerly a large incision, with often third or fourth incision, was made when the surgeon sought for exudate. The bowels were turned out and it was wiped.

Today the gut was milked as enterostomy was done, or the bowel was punctured to evacuate the gas, and the abdomen was irrigated, sometimes permanent irrigation being established. These procedures took time and sapped the patient's strength. Consequence prolonged and recovery seldom resulted.

The treatment given today consists in early eradication of the source of infection, small incision, and gentle removal of pus and exudate, the gut being kept within the abdomen as much as possible. In cases operated upon early the abdomen is closed, whereas in late cases no wall of abscess is drained. The operation is brief and the quantity of anæsthetic small. The patient is rested in sleep before and after the operation and rapidly regains strength, there is less after-treatment, the wound heals by primary intention, and the patient is up

and about in seven to fourteen days. Cathartics are avoided when appendicitis is suspected.

The author makes the following summary:  
When peritonitis is suspected give nothing by mouth and no cathartics operate as early as possible to remove the source of infection, do no more than is necessary to eradicate the source of infection and do not damage the peritoneum. In early cases do not remove the exudate (coarse foreign material due to perforation of the stomach or large rectum in the colon should be removed) and do not drain. Place the patient in Fowler's position. Overcome toxæmia by subcutaneous and rectal infusions of normal saline. Overcome dehydration by the rectal administration of tap water or 5 per cent glucose and 3 per cent sodium bicarbonate solutions. Apply heat over the abdomen by thermophore. Support the circulatory system by cardiac stimulation. If necessary give morphine to quiet the patient and control peristalsis. WALTER C. BURGER, M.D.

## GASTRO-INTESTINAL TRACT

Oliver J. C. Hypertrophic Stenosis of the Pylorus. *J Surg* 9 1934, 444

Congenital hypertrophic stenosis, as first described in 1885. Perhaps the best of the earlier papers on this subject was that published by Hirschsprung in 1885.

The condition must be differentiated from stenosis due to carcinoma, cicatricial contraction following ulcer, hypertrophic gastritis, syphilis, and tuberculous.

The case reported by the author is that of a man 55 years of age who first consulted him in 1909 because of symptoms of pyloric obstruction. The X-ray revealed pyloric obstruction and dilation of the stomach. Gastric lavage also showed marked gastric dilation and diminished acidity. On physical examination the patient was found to be cachectic. The abdomen was distended, its upper half and small hard mass, palpable to the right of the midline at the level of the umbilicus. When the abdomen was tapped periodic waves moving from the left to the right could be seen distinctly. The condition was diagnosed as carcinoma.

At operation smooth annular thickening about the constriction of the pylorus was found. There was no involvement of the mesenteric glands and no signs of cicatricial scars. The stomach was enormously dilated and the pyloric orifice tightly contracted. A typical Ramstedt operation was decided upon. A longitudinal incision made in the pylorus down to the mucosa relieved the stenosis immediately.

Following the operation the patient's condition began to improve. Today he has gained 40 lbs. All gastric symptoms have disappeared. The treatment in this case differs from that employed in other cases re-

ported in that only a Ramstedt operation was performed while in the others posterior gastroenterostomy was done. I. C. BRUNSON, M.D.

Graham, E. A.: Surgical Treatment of Syphilis of the Stomach. *Ann. Surg.* 19, lxvii, 449.

It has been only recently that gastric syphilis has been recognized with any frequency this being due largely to the Wassermann test and the development of gastric roentgenology. In the majority of instances however the diagnosis has been based on more or less indirect findings such as the association of suspicious lesions with a positive Wassermann reaction, marked deformities of the stomach shown by the X-ray but without the corresponding cachexia and anemia of cancer, etc.

Graham has been unable to discover in the literature a case of gastric syphilis in which the spirochetes were demonstrated. He does not discuss the diagnosis but in this connection refers to articles by Mills and Eisterman. The surgical complications include all those incident to ordinary peptic ulcer and those due to scar formation in the healing process. The most common conditions are: tenosis of the pylorus, hour-glass formation and other conditions due to perigastric adhesions, etc. Perforation and hemorrhage has also been recorded.

The literature reports that 1 case of gastric syphilis has been operated upon. Gastroenterostomy was done seventeen cases and resection of the pylorus in four. The procedure in the latter is not stated. Because the data are incomplete or unsatisfactory the results cannot be interpreted accurately. In general the cases were markedly benefited and there were only 10 deaths, one from asphyxia and the other on the third day after operation. Equally good results were gained by resection and by gastroenterostomy.

The author reports three cases of gastric syphilis which he has treated in the form presented, type of lesion regarding which little is known. These are the cases in which there is moderate thickening of the entire stomach which is reduced in size and absence of pyloric tenosis and gross deformity such as hour-glass formation and extensive perigastric adhesions. The symptoms consist of vomiting, pain, loss of weight, etc. The cases had positive Wassermann reactions. In one case nothing was done but rather gastroenterostomy was made (no relief). In the other case the definite pyloric obstruction, pylorotomy was done with entire relief of symptoms.

In those cases of generalized sclerosis of the stomach without organic tenosis of the pylorus or hour-glass formation the benefit to be derived from surgery is doubtful. In the other cases resection of the pylorus gave uniformly good results when stenosis as present while gastroenterostomy was frequently followed by only slight or temporary improvement. Graham concludes that on the basis of present experience pylorotomy is the better procedure. O. S. PROCTOR, M.D.

Scudder, C. L.: Gastric and Duodenal Ulcer. *Iowa Surg.* 9, lxvi, 470.

This article is based on 3 cases of chronic ulcer of the stomach and duodenum treated by operation.

In the 7 cases of gastric ulcer the immediate mortality was 7.6 per cent.

The remote results in 108 cases are 100 in ninety-nine of these patients are practically well while nine report symptoms similar to those preceding treatment. The length of time since the operation in these cases is as follows: one year, nineteen cases; two years, twenty-five cases; three years, thirty-three cases; four years, ten cases; five years, eight cases; six years, three cases; seven years, seven cases; seven years or one case; fourteen years, one case and sixteen years, one case.

The operative procedures were: gastroenterostomy, forty-seven cases; excision alone, six cases; excision and gastroenterostomy, thirteen cases; cauterization and gastroenterostomy, fourteen cases; sleeve resection, three cases; gastrogastrostomy, one case; pyloroplasty, one case; division of adhesions, 14 cases; and partial gastrectomy, twenty-one cases.

In the 30 cases of duodenal ulcer the postoperative mortality was 6 per cent.

The remote results in 101 cases are known. Eighty-eight of the patients were well. The time elapsed since the operation ranged from eight to ten years.

The operative procedure used in the duodenal cases consisted in infolding of the ulcer, the application of omentum to the peritoneal surface of the ulcer and posterior gastroenterostomy.

The general mortality for the entire group of 3 cases was 6.7 per cent. I. F. BRUNSON, M.D.

Crile, G. W.: Gastric and Duodenal Ulcer and Cancer. *J. Surg.* 9, 2, lxvi, 467.

Of 76 cases of lesions of the stomach and duodenum treated at the Cleveland Clinic and the Lakeside Surgical Service data on 560 are available. These include: 89 cases of carcinoma of the stomach; 14 cases of carcinoma of the duodenum; 14 cases of sarcoma of the stomach; 50 cases of ulcer of the stomach; 100 cases of ulcer of the duodenum; and 15 cases of tumors of the stomach (undifferentiated).

In the early cases of this series the mortality was high but the improved technique and management especially pre-operative care the mortality in the last 60 cases of gastroenterostomy and resection was 8 per cent. In simple gastroenterostomy the mortality was less than 1 per cent.

Of the 560 cases, 450 came to operation. The operations were as follows: eighty-one in stage and temporizing operations; 30 gastroenterostomies; and forty-eight resections of the stomach. Information has been obtained regarding 15 patients as follows:

PATIENTS LIVING AFTER OPERATION FOR DUODENAL AND GASTRIC CANCER AND ULCER

Condition	Under one year	One to five years	Five to ten years	More than ten years	Over five years	Total
Chronicity of stomach					6 including for 10 years for 15 years for 20 years for 25 years for 30 years	1
Chronicity of duodenum					for 30 years	
Year of stomach	27	16			27 to for from 10 to 20 years for from 20 to 30 years	70
Year of duodenum	61	27			27 for from 10 to 20 years for from 20 to 30 years	10
					11	

#### PATIENTS DYING AFTER LEAVING HOSPITAL

Carcinomas of the stomach—13 deaths		
Less than 5 years	5 (including able cases)	inspector
5-9 years		
10-19 years		
Not known	7 (including able cases)	inspector
Ulcer of the stomach—6 deaths		
Less than 5 years		
5-9 years		
Not known	3 (including able cases)	inspector
Ulcer of the duodenum— deaths.		
Less than 5 years		
5-9 years		
Not known	7 (including able cases)	inspector

A questionnaire sent to all patients operated upon more than one year ago, sixty six replies were received. Eighty four per cent reported that their symptoms are relieved, 83 per cent stated that they were able to resume their normal work in less than six months after the operation, 65 per cent had no requirement for care for stomach trouble since their operation, received no postoperative treatment, reported subsequent operative treatment, 31 had gained in weight from 1 to 61 lbs., and 7 had had a definite loss in weight.

The study led to the following conclusions:

The operative mortality is now reasonably low.

The body as a whole, the presence of local  
fection or intoxication, and the patient's work,  
habits of eating, and food should be considered as  
off as the local defect.

3. The results of treatment are better in cases of duodenal ulcer than in cases of gastric ulcer.

4. Unknown circle is no longer active

5 The development of peptic ulcer is dependent upon the curative effect of the treatment. It is part of the disease rather than result of the operation.

6 In general, the Sippy treatment should be tried first in the acute cases. If this does not give definite improvement in two weeks, operation should not be further delayed.

**Parsons E.** Investigations on the Histology and Healing of Gastric and Duodenal Ulcer (Unter suchungen über die Histologie und die Heilungsercheinungen des Magens und Duodenalgeschwüres). *Act. Soc. Scand.* 6: 1, 186.

In 1955 recently published work on the histology of gastric ulcer. Ashanary contradicts the theory advanced by Rokitsansky and Haver that the healing of the ulcer is due to shrinkage of the surrounding newly formed connective tissue. Each comes the edges of the mucosa approach each other and finally a connective tissue distinguishes four layers in the structure of the tissues around the ulcer: (1) the granular, (2) nervous, (3) the granular tissue, and (4) the connective layer. He believes that in the process of healing the granular layer is of chief importance. Cohen and Nicolaisen confirm this view. Ashanary and Nicolaisen also found the changes in the nerves surrounding the ulcer which had been described previously by Perman, namely division of the nerves by the ulceration and perineuritic and neuritic changes.

Permanent material consisted of excised specimens and excised ulcers. Autopsy material is shoeless. The Gerson stain is especially efficient for the demonstration of connective tissue. Not every ulcer shows all of the four layers.

The innermost layer (exudate) appears as structureless zone filled chiefly with cell nuclei from leucocytes and formed by shed necrotic tissue. It is formed after emigrated cells, gastric epithelium and its contents.

The necrotic layer consist of necrotic washed tissue. here there is markings of the fibrillary connective tissue matrix. red stained connective tissue trabeculae are visible.

The granulation layer consists of loose granulae and tissue formed by young fibroblasts and contains few newly formed capillaries which usually run straight and toward the ulcer there is also an abundant infiltration of inflammatory cells, mostly lymphocytes, but also some leucocytes. This layer may traverse a level border or may show granulations penetrating into the ulcer. The surface of the granulation layer may be necrotic or normal and covered only by a layer of exudate. In the latter case the layer of necrosis is entirely absent, but it may have

separated and fallen off during or after the operation. Only a few cases showed the entire base of the ulcer covered by the granulation layer (the liver may be partly or completely absent).

In the outward direction the granulation layer undergoes transition into the cicatricial layer which usually consists of dense fibillary connective tissue. This is the largest ulcer layer and forms the true ulcer tumor or induration. If the granulation tissue covers the base of the ulcer, the cicatricial zone is permeated by delicate vessels. The cicatricial zone often shows an accumulation of phagocytes, usually lymphocytes and plasma cells. As a rule the leucocytes are few in number.

There are two main types of ulcers, viz. those with and those without the typical granulation tissue. Of twenty-three gastric ulcers, thirteen belonged to the first group and ten to the second.

The healing of an ulcer proceeds as follows:

Young, multicellular connective tissue first forms around the acutely developed lesion, the deeper part of which are transformed, then the ulcer heals, and fibillary connective tissue. The portion toward the ulcer is changed into granulation layer in older ulcers. Such are surrounded by older fibillary connective tissue. Granulation layer forms on the inner side of this connective tissue and then grows into the ulcer cavity, whereas the newly formed fibillary connective tissue of the granulation layer is transformed into the cicatricial layer. In this way large concentric filling of the ulcer results and is seen roentgenologically during the course of internal treatment (Oehndorf). According to the microscopic picture the greatest tendency toward healing is at the periphery of the ulcer. With the filling in of the defect and following it, the newly-formed connective tissue of the base of the ulcer is covered by the epithelium growing out from the edges of the mucosa. This occurs only if the granulation tissue covering the base of the ulcer is normal at least at the periphery as epithelium cannot grow over necrotic tissue. The absence of thickening of the gastric wall at the site of the scar after the healing of the ulcer is explained by the gradual disappearance of the excess connective tissue.

The most important factor in the healing of gastric ulcer is the new formation of connective tissue by the granulation layer in the base of the ulcer. It is hardly imaginable that thick deposit of dense fibillary connective tissue surrounding an ulcer should shrink any further or that callous gastric ulcer becomes obliterated merely by shrinkage of the surrounding connective tissue. The possibility that such an ulcer may become healed cannot be denied, however, as it is not unusual to see a patient with an ulcer found penetrating at the time of operation become entirely free from symptoms after gastro-enterostomy and remains well for a long time.

The differentiation of the two main types of ulcer with the microscope is of clinical interest. The presence of granulation tissue shows a tendency to healing in cases in which the entire ulcer surface

or a large part of it is covered by granulation tissue. The tendency to heal is good, and when the granulation is missing the tendency to heal is poor. A wide necrotic layer shows that the ulceration is in the process of rapid progression.

The comparison between the histologic picture and the history of the case particularly with regard to the duration and periodicity of the disease is of great importance. No conclusions can be drawn as to the duration of the clinical symptoms from the aim of the ulcer crater and the tumor ulcer. Granulation tissue is seen in the base of the ulcer whether its duration has been long or short. In three cases reported the ulcer tumor consisted chiefly of young, newly-formed connective tissue and therefore had probably been formed during the last exacerbation. The presence of old connective tissue in the lateral portions of the tumor makes it very probable that the ulcer found at operation originated in the base of an older and more or less healed ulcer. The histories were of several years' duration, but the ulcers developed during a relatively short period of time. These three cases, and the fact that not rarely abundant granulation tissue is found in the ulcer in spite of the expected unfavorable histologic picture (namely, pathologic anatomical basis for the view that in a number of cases the ulcer heals more or less completely during the symptomless interval and that a new ulcer is responsible for the new symptoms).

The duodenal ulcer bears a similarity to the gastric ulcer. In three of five cases granulation tissue was completely absent in the two other cases it was present in a few areas, but only in small amounts. Both gastric and duodenal ulcers were found in eight cases. These are characterized by acute inflammatory changes, viz. edema, the infiltration of leucocytes, and the new formation of connective tissue. As a rule they show a broad necrotic layer.

None of the perforating ulcers showed granulation tissue of the same type as that found in non-perforating ulcers. Usually these were surrounded by marked leucocytic infiltration. The distant tissues also showed large numbers of leucocytes, especially in and around the blood vessels. The connective tissue formation is most abundant in the subserosa where often a marked deposit of newly formed edematous tissue consisting of young fibroblasts is seen. A frequent finding is edema and fragility of the tissue around the ulcer.

The severity of the acute inflammatory changes has no definite relationship to the time which elapsed between the perforation and the operation. The acute inflammatory changes are not the result of peritonitis due to perforation, but are caused by the ulcerating process and show that this was under going relatively rapid progression when the perforation occurred. The tissues around a perforated ulcer may show either acute changes alone or both acute and chronic changes. The histologic picture is exceedingly variable, depending upon the conditions under which the ulcer perforates. It differentiates the presence of the frequently severe acute inflam-



matory changes from the picture usually seen in non-perforating ulcers. With perforation there often comes a sudden development of ulcer or relatively rapid progression of the ulcerating process in a previously existing unhealed ulcer. A tendency of the ulcer to recur is also seen, and frequently recurrence at the site of a old ulcer is common to it.

J. V. L. ALLY

Va. Hook, W. The Problems and the Progress of Gastric Ulcer Surgery. *Med. Pr.* 9, 1914, p. 194.

In Paterson's opinion the important factor in the healing of the gastro-entero-antral anastomosis is the degree of alkaline juices into the stomach. He states that pyloric occlusion is unnecessary with gastrojejunostomy, and that gastro-enterostomy if a physiological operation is an effective treatment for ulcers of the body of the stomach as for pyloric ulcer.

Broett of the Hamburg Clinic states that both remote and immediate operative results should be taken into account when the indication for and the method of operation are considered. In the case of a peptic ulcer at least one from the pylorus, even when it does not penetrate, should be treated by transverse resection. This procedure, he believes, produces more normal gastric relations. The most important result of transverse resection is nearly the same as that of gastro-enterostomy, but the latter results in better Billroth's second method should be used only when transverse resection is impossible and there is no considerable difference in the width of the gastric stump.

In cases of ulcer near the pylorus and cases of ectopic pyloric stenosis gastro-enterostomy may be employed and occasionally may be obtained by pyloric closure.

Opposition to transverse resection is based chiefly on the fact that Von Haberer, however, reports no gastric resection by the first Billroth method in which there were no deaths and infections. A successful result was obtained. He believes that this procedure more closely meets the physiological requirements than other operations. Thus it has been no recurrence of ulcer in his cases.

Gastro-enterostomy seems to cure large ulcers of the stomach. Koeber believes that a correctly placed and properly functioning gastro-enterostomy permits the healing of the majority of cases of the ulcer and the formation of new ulcers is prevented. Wladsky and Cohns also are against gastro-enterostomy in the absence of pyloric stenosis.

The Mayo Clinic employs local excision of the ulcer or cauterization of its base.

Von Eiselsberg states that gastro-enterostomy is especially satisfactory in cases of pyloric obstruction. He calls attention, however, to the relative frequency of peptic ulcer of the jejunum after gastro-enterostomy in cases presenting insufficient objective findings. Von Eiselsberg's pyloric exclusion combined with gastro-enterostomy promptly corrects the ulcer hemorrhages but is followed more fre-

quently by recurrence than simple gastro-enterostomy. After transverse resection of the stomach for ulcer in sixty-four of von Eiselsberg's cases there was a recurrence of the ulcer in nine and in four of these a second operation was necessary. Von Eiselsberg confirms von Haberer's statement that Billroth's first method gives successful results and is less mortal.

To reduce the acid-forming area of the stomach, various methods have been employed such as extensive resection of this portion, pyloroplasty, feeding or in folding of the third and second sections of the stomach down to the mucosa around the ulcer-bearing area to decrease the activity of the glands.

Koenig and Strauss emphasize the gravity of tension pyloroplasty, especially as compared with simple gastro-enterostomy.

The author does not favor the Billroth's second method or the Finney pyloroplasty for gastric ulcer.

The German (tribunal) especially emphasizes the changes in the nerve and blood supply caused by resection of the outlet of the stomach.

The author states that gastro-enterostomy favors healing by improving the gastric circulation, but has no direct curative effect. Therefore after the operation the patient must be kept under observation.

His conclusions are summarized as follows:

Intelligent patients should be told that second operations are sometimes necessary to give the best chance for recovery by the least radical methods.

Gastro-enterostomy is applicable to cases of ulcer near the pylorus, in a majority of obstructive cases of the pylorus, in a majority of cases of ectopic pyloric stenosis.

Transverse resection is well suited for ulcers and pyloric stenosis.

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tances a gastro-enterostomy also was performed. When the ulcer is not too far from the pylorus the thor f vora resection.

In nine cases resection was done. As these were the worst types of gastric ulcer the results were not so satisfactory. Thirty three per cent of the patients are well and thirty three per cent are better.

Eight cases were treated by the Billroth II operation. There were four deaths.

The Pólya caecio was performed in thirteen cases, with good results in 9.6 per cent.

For ulcers 3 to 4 in. from the pylorus the choice lies between resection and excision.

For ulcers near the pylorus or 3 in. from the pylorus the thor f vora the Pólya method.

If the operation is done in two stages or a gastro-enterostomy has been done previously the Billroth II method is the rational procedure.

For ulcers at or close to the pylorus, especially those which cause stenosis, a posterior gastro-enterostomy is the simplest and safest operation.

Because of the possibility of cancerous degeneration of a gastric ulcer resection or excision of the lesion is ideal unless the operative risk is greatly increased by the general or local condition.

I. E. BROWNE, M.D.

Stranglen, M. The Treatment of Callosus Gastric Ulcer by Transventricular Excision by the Kraskie Method. (Behandlung des callosen Sten gastrisch durch transventriculäre Exzision nach Kraskie.) *Ber. Klin. Chir.* 9. xxvii. 400.

As the biology of gastric ulcer has not yet been determined and as there are so many contradictory views regarding it, the surgical treatment must depend upon the indications in the individual case. The operation should always be as conservative as possible and as radical as necessary, and particular care must be taken to avoid injuring the important vessels and nerves of the lesser curvature.

The author reports a series of cases in which an ulcer on the posterior wall and the lesser curvature of the stomach was exposed through an opening in the anterior wall of the stomach according to the Kraskie method and removed without opening of the posterior wall. Following the excision of the ulcer the wound was cauterized and the mucosa and mucous membrane are joined with deep sutures. Gastric enterostomy was performed only when it appeared that the ulcer had mechanical effect on the pylorus by reason of its situation. In recent cases entrance has been gained to the stomach through the posterior wall after division of the gastrocolic ligament.

The application of clamps to the stomach does not appear to be essential for aseptics. By proper lavage of the stomach before operation, by the aspiration of escaping gastric juice with an air pump during the operation, and by careful picking of the vicinity the escape of gastric contents into the abdominal cavity can be prevented. In Stranglen's opinion the application of intestinal clamps may be a causative factor

in the development of peptic jejunal ulcer. In his own cases in which clamps have not been used there has been no instance of peptic jejunal ulcer in the last ten years.

In the fourteen cases of this type which were operated upon (only those with perforated ulcers of the posterior wall and lesser curvature) there were two deaths following operation, one on the nineteenth day from embolism, and the other on the fourth day from pleurisy consequent on the anastomosis. The latter was that of a patient who was 67 years old. Among the other twelve cases there were six complete cures, five recurrences, and no case in which an ulcer could not be discovered although the patient constantly complained of symptoms. In the cured cases gastric enterostomy was performed, two, gastrostomy in one, gastroplasty in two, and excision of the ulcer only without any other operation in one. In all of the cases of recurrence excision of the ulcer alone was done. In one of these cases gastro-enterostomy performed later gave permanent relief from pain.

It appears therefore that the results of transventricular excision of the ulcer according to the Kraskie or Umsel method are better when this operation is combined with gastro-enterostomy. On the basis of his own experience the author can recommend transventricular excision as an emergency operation but not as the method of choice for ulcers of the posterior wall. He believes that the most important cause of recurrence is the entirely inadequate loosening and mobilization of the posterior wall and, above all, the continuance of the circulatory disturbance which is increased by the suture.

Boo (2)

Peterson, E. W. Acute Intestinal Obstruction in Infancy and Childhood. Brief Review of Fifty Five Cases. *Surg. Gynec. & Obst.* 9. xxii. 436.

Peterson reviews fifty-five cases of intestinal obstruction in fifty-three young subjects. Cases of imperforate anus, congenital atresia or stenosis, and strangulated external hernia have not been included.

Acute intestinal obstruction is the most serious surgical affection of the abdomen in early life. Most other surgical conditions tend toward spontaneous recovery. It is generally accepted that the lumen of the obstructed bowel contains a toxin which, when injected intravenously into a normal animal, causes the symptoms of intestinal obstruction, and that certain chemicals are developed as the result of protein disintegration which cause the symptoms present in acute intestinal obstruction, namely the fall in blood pressure, temperature disturbances, vomiting, diarrhea, derangement of kidney function, high non-protein blood nitrogen, profound congestion of the duodenal and jejunal mucosa, and collapse which some times result in death.

In the fifty-five cases the obstruction developed in infants in forty-three, and in children (from

12 months to 11 years) in 14. There were twice as many males as females. Intussusception was the responsible factor in forty-six cases. In the others the condition, as due to early post-operative band or adhesion obstruction, late post-operative band or adhesion obstruction, band or adhesion obstruction without previous operation, tumor obstruction, mesenteric thrombosis, primary obstruction, or foreign body obstruction.

Intussusception is pre-eminently a affection of infancy and early life. Thirty-nine of the patients whose cases are reviewed were infants from 3 days to thirteen months old and seven were children from twenty months to 9 years of age. Thirteen were males and fourteen were females. The cardinal symptoms are pain, shock, vomiting, mucous or bloody stools, and abdominal tumor. The pathologic process consists in migration, circulatory stasis with oxidation and anemia, infection, inflammation, and gangrene of the intussusceptum. Necrotic, uncomplicated abdominal purpura and typhic colitis must be ruled out.

Pain was present in all cases and some degree of shock in most of them. Vomiting occurred in every case. When vomiting occurs early it is indicative of regulatory strangulation. Microhemorrhagic stools and a palpable tumor are both present in 95 per cent of the cases. Early operation is the safest, simplest and only certain plan of treatment, and gives almost uniformly good results in all types of cases regardless of the age of the patient. According to the classification of Lubbe the anastomoses were enteric three, ileocolic, thirty-one, enterocolic or double intussusception eight, and cecal ten.

In the majority of cases no definite etiological factor was found. In two cases the responsible factor was a Meckel's diverticulum, in another a congenital tumor of the cecum, and in several instances appendicitis. The author has made it a rule always to remove the appendix, believing that occasionally appendicular irritation induces the spasm and brings about the intussusception.

There was recurrence in 1 case. In one, the intussusception returned at the same site. In the other adhesionous anastomosis a second operation was still required, another intussusception required reduction.

There was but one successful reduction without laparotomy. When reduction was accomplished, the mortality was 5 per cent. Excluding the deaths not due directly to the intestinal obstruction or its surgical treatment the mortality drops to 0.7 per cent. The longest interval between the onset of the condition and successful reduction was four days, and the shortest, five hours. All patients were within forty-eight hours of the onset recovered. In the cases requiring resection the mortality was 79.4 per cent. Recovery in cases developing an infarct after resection is rare.

The most important factor in the treatment of intestinal obstruction is early operation. Failure arises if a more important to perform the operation

early than wait. A two stage operation is often proved successful. In single procedure may result in failure. A local anesthetic is the anesthetic of choice in many cases. O. S. Proctor, M.D.

O'Connor, J. Acute Intestinal Obstruction. *Ann Surg* 9, 393

The general symptoms in intestinal obstruction are frequently delusive as regards the amount of systemic poisoning and shock which has taken place. Early operation without evagination, and manipulation or prolonged anesthesia offers the best chance of recovery.

The location of the incision is extremely important. The author has found that when the area of incision is not indicated by the history, the obstruction will usually be found in the ileocecal region. In such case the incision is made along the lower portion of the right semilunar line. As a rule such an incision obviates too much handling of the bowel.

When complete circle of bowel is gangrenous, lateral anastomosis is done, the gangrenous bowel is incised, and the intestinal contents are emptied into pus basin. A trial suture is then tied around arch portion of bowel, the gangrenous portion is cut away, the stump is inverted, and the right peritoneal sutures are tied.

When narrow band of gangrene is resulted from obstruction, stay sutures are inserted over the gangrenous band, the bowel is cut through and excised, and continuous Lembert suture is placed about the incised bowel.

In doubtful cases in which the band of gangrene is wide, crucial incision is made in the gangrenous area, the intestinal content are evacuated, the four gangrenous flaps are excised, and the interior of the bowel is inspected. If there is no angulation the bowel is repaired by continuous Lembert suture.

In acute cecal obstruction the outlook is very grave because of the enormous distention.

Through a right vertical incision the hand is kept down to the right iliac fossa and the lower portion of the rectum of the cecum. Small incision is made in the ileocolic. The cecum is then pulled through this opening and through and through sutures previously introduced. The external incision are tied. The cecum is sewed to the incision, incised, and evacuated. The later operation is then performed as coming indications.

In conclusion the author states that if greater care is taken in the perforation of the stump and raw surfaces, the operation the number of cases of intestinal obstruction could be greatly decreased.

J. L. Dismore, M.D.

Smith, R. I. Intestinal Foci of Infection. *Ann Surg* 9, 421, 53

The author believes that chronic arthritis originates from focal infection in the intestinal tract due to the failure of some part of the ileocecal coil to empty itself properly.

X-ray examination of over 100 cases of chronic arthritis has shown a uniform picture of congenital mobile caecum. By reduplication of peritoneum from the right colic artery to the parietal peritoneum over the right kidney the colon is rotated and folded so that an hour glass appearance is produced with thin-walled toneless caecum which does not empty itself. This inert sac ultimately becomes a culture medium for various bacteria, chiefly streptococci.

Stool examination in thirty cases has shown amoebae and flagellat protozoa. Perhaps these organisms play a secondary rôle in the infection by furnishing culture media for bacterial growth, and by their passage through the mucous membrane make portal of entrance. Ely found amoebae histolytica in the head of the femur removed in a case of arthritis deformans.

In 95 the author reported fourteen cases of chronic arthritis operated upon for the removal of intestinal foci of infection. Two of the patients have died, four are untraced, three are no better, one has an arrest of the disease but is unable to walk on account of joint fixation, and four restored to normal activity.

Of the patients whose cases are reported in this article thirty were operated upon before 1917. Ten were bedridden and helpless when operated upon, are now able to work with their hands and are self supporting. In these cases a partial colectomy or ileocecectomy was done.

In thirty eight cases operated upon since June 1920 there were eight Mayo colectomies on the right side, ten ileocecectomies, and twenty eight plastic operations on the ileocecal col designed to restore cecal function and do away with the sac. There was temporary alleviation of the symptoms of pain, swelling, and joint immobility. Following the use of restricted diet, liquid paraffin, and abdominal support, there was progressive improvement. The joints became amenable to orthopedic treatment as soon as the pain subsided. Operations and manipulations may be carried out without fear of lighting up another attack of acute inflammation.

The most striking immediate results follow removal of the right colon together with daily hypodermoclysis of 1,000 cc. of saline solution until the quantity of urine increases from 100 to 1,000 ccs., which occurs about the tenth day. In forty eight to seventy-two hours the swelling and pain disappear and the joints become movable. When the quantity of urine reaches normal the joint symptoms recur.

After the release of constricting bands or the division of a Lane link, recurrence may be prevented by the interposition of tissue or the use of free omental grafts to cover all the denuded surfaces.

The author concludes that chronic polyarthritis may be the result of focal infection in the ileocecal col and that a case of arthritis calls for careful investigation of the gastro intestinal tract, especially the mobility and motility of the ileocecal col. If a pocket is found the treatment should consist

in an abdominal operation to correct the faulty mechanical conditions and to restore the function of the caecum, prolonged medical régime to restore the normal intestinal flora, and orthopedic procedures to restore joint function.

WALTER C. BURKETT, M.D.

Haldenbogen, M. A. Two Cases of Rare Diseases of the Rectum (Zwei Fälle seltener Erkrankungen des Mastdarms). *Wien. klin. Wochenschr.* 1922, 1, 65.

Case was that of woman 46 years old who had palpable, hard, and very painful infiltration with an ulcerous base in the ampulla of the rectum. The Wassermann reaction was negative. Carcinoma of the rectum was suspected and an artificial anus was formed. The operation was followed by regression of the infiltration and its complete disappearance in a few weeks after a course of anti-syphilitic treatment. This was therefore a case of gumma of the ampulla of the rectum.

Case was that of an unmarried woman 50 years old who had been castrated and subjected to prophylactic radium treatment per rectum because of carcinomatous cystoma of the ovary. A hard, deeply penetrating ulcer of the rectum developed which clinically resembled carcinoma but on biopsy was recognized as an inflammatory radium ulcer.

Pinnerow (Z.)

## LIVER, GALL-BLADDER, PANCREAS AND SPLEEN

Drennen, J. G. Bacteriology of the Gall Bladder. *Ann. Surg.* 1919, 68, 48.

This study is based on 100 unselected gall bladders removed at the Mayo Clinic. Cultures were made of the fluid contents, which consisted largely of mucus, serum, blood, and degenerated epithelial and pus cells and in 95 resembled pure bile. Infected fluids were found in only 9 per cent of the cases. The organism was the bacillus coli in 1 per cent, the staphylococcus aureus in 4 per cent, the streptococcus haemolyticus in 1 per cent and non-pigment forming sarcina in 1 per cent. The possibility of obtaining cultures from gall bladder fluids is dependent upon the amount of inflammatory exudation acting as diluent.

From the experiments reported it seems permissible to assume that the growth of bacteria will not take place in pure bile. To demonstrate this, a series of tests was made with various dilutions of bile inoculated with different types of bacteria. Eighteen organisms were inoculated into 70, 80, 90 and 100 per cent glucose bouillon, and controls in 100 per cent glucose bouillon were made. These organisms, with the exception of the non-pigment forming sarcina, grew well in the control, and in 10 per cent and 70 per cent ox gall. In 80 per cent ox gall only 33 per cent of the organisms showed growth, and in 90 per cent ox gall, only 55 per cent. In the pure ox gall there was no growth.

Greenwood and Poppers. P II Cholecystenterostomy from an Experimental standpoint. Surg Gynec & Obst 19 22 445

Nussbaum is believed to have been the first to suggest the operation of cholecystenterostomy. Van Wagoner first performed the operation of this type. It was made the gall bladder and ascending colon together and later joining them to the ileum. Subsequently many operations took up the procedure experimentally and locally among them Green, Hiley, Coles, and Murphy. The latter advocating use of the butt. The operation was first done on man in one stage by Monastrell in 1907. Later it was done by Hays, Kalk, Kolmer, and others.

Though it is now recognized operation of the gall bladder is indicated there is still difference of opinion as to what part of the gastrointestinal tract should be used. Most surgeons prefer the stomach, duodenum, or jejunum. When necessary the stomach, jejunum, ileum, or colon may be used. It is best to use the latter however on account of the degree of supporting bulging in. At the present time cholecystenterostomy is gaining in favor. It is more useful than the danger of infection of the gall bladder. It does not cause necrosis of the jejunum, duodenum, and in dogs, the fistula is never best followed by a rupture of the digestive tract or the general health. In a number of operations have also noted the jejunum free use of it as a substitute.

The likelihood of a case being infection of the bile passages and the use of far greater importance than the use of the intestine. The impulse of the liver is lost, the bile is all for an hour with bacteria laden food particles. The risk of infection increases from the fact that in the stomach, the experiment in the gall bladder is not necessary. In the case of the liver and the bile duct, the complication is a question both the part of the bile duct enough for the development of the bacteria. The bacteria found from the bacteria of the stomach, the pathology of the infection.

The authors conducted the experiment on the dog. The method of the method is that the bile is followed by the ascending infection of the bile passages. The operation was suggested by the author. The operation is done in the dog. Culture was made from the gall bladder, the liver, and the portions of the gastro-intestinal tract used for anastomosis. Generally all the bile passages of the liver, the bile duct, and the bile duct. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog.

The culture of the gall bladder prior to operation both aerobic and anaerobic. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog. The operation was done in the dog.

mon duct which was dilated in the earlier cases. It was found that the gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated. The gall bladder was dilated.

From the experiment performed on dogs in the gall bladder, the stomach, the duodenum, and colon the following conclusion are drawn:

The gall bladder is usually becomes infected late or occurs; used for anastomosis, and there is little difference between the stomach and the duodenum in the matter of rapidity of infection. The colon is not the portion of the gastrointestinal tract to be chosen by preference. Its use is associated with much greater immediate danger of peritonitis and rapid infection than the use of the upper part of the gut. The liver becomes infected sooner or later in the method employed by Greenwood and Poppers. From an experimental standpoint cholecystenterostomy is a operation to be recommended only for all selected cases with obstruction of the passages in which the temporary comfort of the patient is paramount and cases of irreparable common duct obstruction.

#### O. PERCUTANEOUS

Diamond, L. Traumatic Pancreatitis. Ann Surg 1914 59

The author reports a case of traumatic pancreatitis in a two-year-old cat whose abdomen had been punctured by a gun. The cat was somewhat shocked and complained of pain. The abdomen was swollen. When he was admitted to the hospital, the cat was found to have a suggestion of subcutaneous and slight tenderness in the epigastrium. The temperature and pulse were normal. The cat was kept in the hospital for a week. The patient refused to allow an operation and took the cat home. Six and one-half months after the injury the patient was returned to the hospital with globular epigastric swelling about the size of an orange. This was a somewhat tender and almost completely fixed position. The epigastric swelling was spherical, hard, and in the upper abdomen. The temperature, pulse, and respiration were normal.

At operation through midline incision the omentum prevented numerous yellowish spots of fat in the pancreas. A large globular cyst lying behind the stomach in the lesser sac was removed. The cyst was lying through the mesocolon, the cyst was fully exposed. It was then packed off and drained of its contents by means of a trocar and cannula. The deepest part of the cyst was

elliptical opening about the size of the tip of the little finger communicated with the body of the pancreas at a point just to the left of the median plane. The edges of the cyst where the trocar had entered were manipulated to the anterior abdominal wall and a large tube drain was inserted deeply into the cyst cavity. The cyst fluid contained pancreatic ferments. The omental sac showed fat necrosis.

Convalescence was uninterrupted. Drainage was never profuse and rapidly grew less. The cyst cavity as irrigated daily with 500 cc silver nitrate solution. Seventeen days after the operation the patient left the hospital with the wound healed.

Of forty-six patients whose cases were collected by Stuart, thirty-nine were operated upon and six died, and thirty-seven recovered. After an exploratory laparotomy Ochsner successfully drained abscess of the pancreas and Delatour successfully drained pancreatic cyst from behind.

The author is undecided as to whether posterior drainage should be employed without previous anterior exploratory laparotomy. Posterior drainage is best in the treatment of pancreatic abscess.

Anterior manipulation has given such satisfactory results in the majority of cases that it is the operation of choice. Complete removal of the cyst is generally found impractical or impossible.

WALTER C. BURKET, M.D.

#### Seawater, C. T. Case Reports: A Large Pancreatic Cyst. *Cancer*, 1914, 9, 10, 1135.

The author's case was that of a girl aged 6 years. Four years ago the abdomen began to enlarge gradually. Three years ago 6 qts of fluid were removed from the abdomen by tapping. Two years ago 8 qts were withdrawn. Gradual refilling occurred. Otherwise the patient seemed well. The temperature, respiration, and pulse were normal. The abdomen was enlarged from the symphysis pubis to the diaphragm. Percussion dullness extended from the pelvis to the stomach and midline. The abdomen was tympanitic over both flanks and the stomach.

Operation performed through midline incision below the umbilicus showed the abdomen to be filled by a large cyst whose base as attached in the upper part. The cyst wall as slightly yellow. Ten quarts of gray milky fluid were drained off by means of a trocar and suction apparatus and the sac was then drawn out and opened more widely. The lining of the cyst as rubbed with an iodine sponge and part of the cyst wall as excised. The sac, with rubber tube tied into it, was then drawn out through a small incision below the umbilicus and fastened and the abdomen closed.

There was almost no drainage. The patient left the hospital on the sixteenth day and remained well until the twentieth day when she developed an influenza pneumonia from which she is now recovering.

The cyst presented below the transverse colon. Pancreatic cysts may present above the stomach between the stomach and colon, or below the colon.

WALTER C. BURKET, M.D.

#### MISCELLANEOUS

Chute, H. M. Subphrenic Abscess. *Boston M & S J*, 9, 1891, 68.

Subphrenic abscess is usually secondary to perforation of gastric or duodenal ulcer or to appendicitis. Less common causes are disease of the gall bladder, biliary tract, pancreas, spleen, or liver empyema, wounds of the abdomen, chest soiling of the abdominal cavity at operation, and septicæmia with localization of the infection between the diaphragm and the liver.

In addition to the posterior uncovered area, there are four fairly distinct peritoneum-lined spaces between the liver and the diaphragm which are formed by peritoneal reflections. The coronary and left lateral ligaments divide the diaphragm to the surface of the liver roughly into an anterior and posterior half and the falciform ligament divides its anterior and superior peritoneal surfaces into right and left half. The left intraperitoneal space is the lesser peritoneal cavity.

A perforated gastric ulcer tends to drain into the right anterior space. A posterior gastric ulcer may perforate into the left posterior space. A high appendiceal abscess may drain into the right posterior space by way of the lateral colic groove. Infection readily follows the lymphatics behind the cecum and the ascending colon into the subphrenic area. A pyelophlebitis may present as one of its features. Abscess about the portal vein just below the diaphragm. This abscess may contain pus alone or pus and gas. The gas comes from necrosis or is produced by an aerobic bacterium.

The symptoms may begin insidiously or acutely. When the onset is gradual the patient may be considerably seemingly ill from a surgical lesion in the abdomen, then a steadily rising daily fever with chills, sweats, and loss of appetite and weight develops. There is some fullness in the epigastric region associated with considerable gastric distress, belching of gas, and sour eructations, hiccuping, cough, and pain on deep breathing (diaphragmatic pleurisy). The patient looks ill and feels very sick and soon grows worse rapidly.

An acute onset may occur with shock and collapse from gastric or duodenal perforation. A diffuse peritonitis or localized subphrenic abscess may result.

Physical examination shows marked limitation of motion on the affected side of the chest, visible widening or bulging of the right lower thorax, and occasionally edema over the right side or the back of the chest. Percussion reveals flatness over the lower anterior and posterior thorax. The presence of gas gives tympany with obliteration of the lower liver dullness. The line of percussion dullness may

descent in respiration. Dullness may extend anteriorly to the second rib and posteriorly to the middle of the scapula. Auscultation discloses absence of the breath sounds and vocal fremitus over the area of dullness. Above this level for a short space vocal and tactile fremitus may be increased because of compression of the lung. Occasionally there is a pleuritic friction rub. When the abscess contains gas and pus, succussion splash may be elicited by shaking the patient. Fluid in the pleural cavity complicates the diagnosis. When this is present the exploratory needle may obtain first a straw-colored fluid and then pus or pus and gas. The latter edge may be well below the costal margin. Marked leucocytosis is generally present. In certain chronic cases there is a leucopenia.

X-ray and fluoroscopic examinations give the most positive findings in the majority of cases. It may be difficult to determine by the symptoms and physical signs alone whether the condition is a subphrenic abscess, pyothorax or pyopneumothorax. A high fixed diaphragm with persistent costophrenic angle is very typical of subphrenic abscess. The level of the diaphragm may be only slightly raised or reach to the third rib. The line of the diaphragm is smooth regular curve. In cases of liver tumors, abscesses, and adhesions from old pleurisy the curve is more irregular and more sharply localized.

Subphrenic abscess causes weight loss, emaciation, and general debility. In cases not operated upon the mortality ranges from 8 to 100 per cent, while in those treated surgically it is 5 per cent.

The treatment is incision and drainage. Abscesses on the left side must always be approached from

the front. A left anterior space abscess is drained through the anterior abdominal wall. A left posterior abscess is drained by a second incision from behind, which may or may not be below the rib margins. Collections on the right side are drained from below the rib margins, or by incision between the lower ribs, or by resection of one or more ribs. To drain adequately one must go through the lower part of the pleural cavity or retract the pleura. A superimposed empyema may be fatal.

The author recommends a 1 stage operation under local or general anesthesia. At the first operation a portion of the tenth rib is resected in the mid axillary line. If the pleural cavity contains fluid this will then escape. The borders of the opened parietal pleura are sutured in continuous catgut sutures to the diaphragm which presents in the wound. The wound is dressed with vasoline gauze. After forty-eight hours, when the pleural cavity has become walled off by adhesions, an incision into the diaphragm parallel to the parietal incision in the pleura is made under local anesthesia. The edges are retracted and the pus is located with the finger. A large rubber-tube is then inserted and held in place by a suture through the skin or fascia. The drainage is continued for a week or more and followed by drainage by rubber dam. Too hasty removal of the drain may result in the formation of a secondary local abscess.

The author has no difficulty from bleeding intercostal vessels or rib necrosis, and reports aurable results from the procedure described. The two-stage operation is safer than the one stage operation because it reduces the chance of empyema to the minimum.

WALTER C. B. KEET, M.D.

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Winkelbauer, A. Chronic Non-Suppurative Osteomyelitis in the Adult with Primary Total Necrosis of the Diaphysis (Ueber chronische nicht eitrige Osteomyelitis beim Erwachsenen mit primärer Totalnekrose der Diaphyse). *Arch f. Klin. Chir.* 9, 1915, 26.

Two cases are reported which speak in favor of Ritter's theory that in osteomyelitis the necrosis is primary throughout its entire extent and that later breaking down of the bone does not result from the suppuration.

In the first case a curettage without an increase of fever was followed by swelling of the entire arm which persisted for two months and then retrogressed slowly following immobilization and the application of heat. The roentgenograms showed osteolytic necrosis of the diaphysis of the humerus. In the second case, in which the course of the condition was similar, a cloudy serous, slightly blood colored fluid containing staphylococci was obtained on puncture

In three months the albuminous exudate changed into pus.

In neither case did the osteomyelitis show an acute stage. The necrosis of the entire diaphysis, such as roentgenologically demonstrable dead and living cells, respectively, after the beginning of the disease speaks in favor of an toxic disturbance of nutrition of the affected bone occurring in the arterial artery. The severe reaction of the tissue in both cases soon led to liquefaction of the necrosis and the development of peripartial mantle of bone. In the second case a small sequestrum was removed by operation to hasten healing. The author states that as sole conservative treatment is advisable in these chronic albuminous forms.

BRI. VOL. (2)

Barrie, G. Hemorrhagic Osteomyelitis. *J. Bone & Joint Surg.* 9, 1915, 651.

The author emphasizes the fact that hemorrhagic osteomyelitis is essentially a benign condition with the characteristics of mild inflammatory affection. Until comparatively recently it has regarded as malignant.

There is a similarity between the scavenger giant cells of simple hemorrhagic osteomielitis and the giant cells of giant-cell sarcoma. In the former condition there is also an associated low grade inflammation.

About 75 per cent of the cases are due to bone trauma. Other causes are hematogenous infection, bone malnutrition, and endocrine disturbances. The lower extremities are most frequently involved.

Usually the symptoms are mild. There is pain on pressure associated with limping if the lower extremity is involved, and with limitation of motion if the condition is near a joint. The size of the swelling varies according to the area involved.

Grossly a mass of highly vascular granulation tissue fills the cavity of the bone. Microscopic examination reveals the typical granulation tissue. Some sections show numerous scavenger giant cells but their distribution is irregular.

X-ray examination is essential. Usually it shows a clean-cut round spot in the cortex. Expansion without breaking of the periosteum is observed. In young persons the condition does not penetrate the epiphyseal cartilage.

In the differential diagnosis acute inflammatory infections of bone, highly malignant processes, chronic bone abscess, true bone cyst, myxoma, and slowly growing fibrosarcoma must be considered.

The treatment consists in removing all exuberant granulations filling the destroyed bone areas, and through curettage of the cavity wall. Repair in large cavities is favored by filling the cavity with bone graft, chips, or a Moscovitch plug.

F. A. G. MORGAN, M.D.

Macci, B. Primary Multiple Sarcomata of the Bones (Sarcomi multiplici primitivi delle ossa). *Paladin* Rome 9 213 ser. cit. 473

The author's case of multiple and primary bone tumor as that of a man aged 50 years who had suffered from youth from chronic bronchial catarrh and pulmonary emphysema. When examined by Macci he showed a frontal tumor the size of a hen's egg which had increased slowly and continuously about pain during period of five months. The growth of the neoplasm as associated with sharp thoracic pains and cough. Numerous other tumors were found in the cranial bones, the clavicle, the mandible, and the ribs. The seventh rib on the right side tumor caused fracture. As far as could be discovered these growths were contemporaneous in their evolution with the frontal tumor. A diagnosis of multiple myelomata was made. Tuberculosis, syphilis, and chronic inflammatory processes were ruled out by the findings and history. The symptoms were essentially and continuously osseous and left no doubt regarding the primary localization of the disease in the bones.

The frontal tumor was removed. The branch in the bone involved both the external and the internal table. The tumor was different in texture. Histologically it seemed to be a round cell sarcoma.

The author discusses multiple myelomata and sarcoma of the bones and their relationship at length. As his patient had had several previous falls during periods of intoxication trauma may have been an etiological factor in the condition.

W. A. BRYMAN

Rhodes, R. L. Periosteal Sarcoma in Association with Osteomyelitis; Report of Three Cases. *Surg. Gynec. & Obst.* 9 233 440

In two of the cases reported there was an ulceration of the skin through which the pyogenic infection of the bone might have entered, and in the other case the malignancy may have developed after the operation for the osteomyelitis. The fact that two of the patients are living, and in excellent health over a year after the amputation supports the generally accepted view that the round cell tumor is not apt to form metastases.

F. J. BERNHARDT, M.D.

Floetzer, H. A Muscle Angioma of the Deep Musculature of the Neck, the Rhomboides Minor Muscle (Muskelangiom der tiefen Nackenmuskulatur Musculus rhomboides minor). *II. 14. Mittheilung* 9 2, 233 269

The author reports a case of tumor as large as the fist which developed on the right side of the neck of a girl 9 years old. This growth was an intramuscular cavernous angioma with relatively hard fibrous septa which had its origin in the proximal portion of the rhomboides minor muscle. It extended from the second cervical vertebra to the first thoracic vertebra and was connected by large elastic bands with the vessels of the neck and the deep vessels of the muscles along the vertebral column. It was distinctly compressible. Operation resulted in cure. The differential diagnosis from lipoma, cold abscess, and meningocoele is discussed briefly. The diagnosis was established by puncture (dark blood). An early operation is advisable as the tumor may grow and exert increasing pressure on the neighboring organs.

HORRIGAN (Z)

Rogers, M. H. The Pathology of Tuberculosis of the Joints. A Study from the Clinical Standpoint. *J. Bone & Joint Surg.* 9 22 3 17 679

It is taught today that in a large percentage of cases of joint tuberculosis the original focus is in the bone, near or at the epiphyseal line, and that the involvement of the joint is practically always secondary.

As described in the literature the pathology consists of an invasion of the bone, generally at or near the epiphyseal line, extension toward the joint surface, destruction or absorption of the joint cartilage, and invasion of the capsule.

In an article on this subject published in 1907 Allison agreed with Nichols who stated in 1898 that the bone invasion was the typical pathologic lesion first initiated.

From cases treated at the Massachusetts General Hospital the author concludes that contrary to



the belief of N. boys and others synovial in origin occurs first and extension into the bone is secondary.

On the basis of his experience with early arthrotomy, the author believes that tuberculous attack is classified in two cases: being first a local type and later bone.

Tuberculosis of the hip beginning in adult life is rare condition in the author's clinic. Rogers has not seen proof of tuberculous in which the end result was not destruction of bone.

A case cited is that of a patient of 13 years who had a intermittent limp. There was restriction of motion but when the hip was opened slight trophy of the thigh proved to be due to synovial tuberculosis. The operation was done after diagnosis of tuberculous had been made by excising and subject to tuberculous test had shown that it was in temperate tuberculous form. The patient had been in the hospital for two years. Hence of bone in the case found but an exposed piece of the capsule showed tuberculous on microscopic examination.

In a 14-year-old boy of knee was no sign of bone in the joint. After the first exposure of bone in the joint was followed by the second exposure. The patient followed by a third exposure. There was loss of bone in the joint in the last case.

Tuberculosis of the knee joint in the last case was found in the joint in the last case. The patient followed by a third exposure. There was loss of bone in the joint in the last case.

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formed defect with a ragged base on the anterior surface of the distal epiphysis and in front of it a isolated oval piece of bone. The epiphysis of the femur was found in the defect. The right tuberculous and the epiphysis of the calcaneus tuberculous were normal.

Under anesthesia the patellar ligament was split lengthwise and the small piece of bone was removed. The lower portion of the epiphysis of the femur was found in the defect. The right tuberculous and the epiphysis of the calcaneus tuberculous were normal.

At microscopic examination of the removed part of the femur the epiphysis was found normal. The epiphysis of the femur was found normal. The epiphysis of the femur was found normal.

In the second case the disease was found in the left knee. The patient followed by a third exposure. There was loss of bone in the joint in the last case.

The patient followed by a third exposure. There was loss of bone in the joint in the last case.

Herszen P. Acromegaly from the Surgical Standpoint (Ueber Akromegalia vom chirurgischen Standpunkte) *Nervy Chir Arch* 9 83

This article is based on the following case. The patient was peasant 48 years old who gave history of alcoholism. He had married 28 years of age. His wife had aborted once and had borne five children. All of the children died early. The patient acquired syphilis during his twenty second year but was cured. For fifteen years he suffered the severe headaches. For ten years he noticed increase in the size of his face, hands, and feet but there had been no further increase in the last few years. Five years before he was seen by Herszen he had been operated upon, a large frontotemporal flap being cut on the right side. According to the surgeon report the sella could not be reached.

The patient was of massive build and tall. The lips and tongue and the skeleton and soft parts of the face, the hands, and the feet were markedly hypertrophic. The skin was very where hairless, dry and inelastic, and the papillae were enlarged, broadened, and sclerosed. The subcutaneous fat tissue was soft and hyperplastic especially in the mammary regions. The patient complained of continuous headache and apathy. Other conditions were lack of insight without limitation of the visual field, slight myopia, and tardy reaction of the pupils. Sensory and motor disturbances were absent but there was no knee reflex or Achilles tendo reflex. The thyroid gland was not palpable. The penis and scrotum were flaccid and the testicles atrophic. The patient had been impotent for ten years.

The roentgenogram showed an enormous enlargement of the maxillae, the supra orbital arches, and the frontal sinuses and marked widening and deepening of the sella turcica. The posterior clinoid processes were indistinct.

The author considers it possible that the adynamia myxoedema like symptoms in this case insofar as they were not due to secondary stage of pituitary hypofunction, were the result of the atrophy of the thyroid gland and testicle.

Herszen is opposed to the transnasal operative procedures as they are not based upon embryological development and they open the sinus and occasionally broken wall of the sphenoidal sinus in the presence of frequently undetectable lesions of the floor or the anterior wall of the sella turcica, in this way destroying asepsis. The various endonasal methods are equally unreliable.

In the case reported the author operated according to the Giordano Schloffer method. He reflected the nose laterally with an osteoplastic flap 4 cm broad taken from above split the septum from the floor of the frontal sinuses downward and backward and resected the septum, the upper and middle turbinate bones, and the ethmoidal cells. He was unable, however, to distinguish the anterior wall of the sphenoidal sinus distinctly and did not reach the sphenoidal sinus. He cut through fairly thick layer of bone near the anterior all of the sella

turcica partially opened the sella split the smooth dura protruding in front of it (whereupon no spinal fluid escaped) and removed with spoon about 5 gm of colloidal substance. The upper border of the hypophysis, which showed neoplastic change was not reached and no attempt was made to reach it. Iodoform gauze strips were laid in the sella as advised by Kocher the nasal cavity was packed and the nose and the flap of lip and bone removed from the anterior all of the frontal sinus were sutured back into place. Primary union resulted.

Rhinoscopic examination, which was done later showed only a few pale granulations on the upper roof of the nasopharynx at the base of the skull. A probe entered the cavity of the sella turcica freely without causing any bleeding or escape of cerebrospinal fluid. The head had disappeared. Even at the end of the first week diminution in size was observed in the fingers and the toes and the tongue. At the end of the color of the skin became normal the thyroid gland became palpable and the apathy decreased markedly. Vision and the pupillary reaction both remained unchanged.

Microscopic examination showed that fairly large glandular epithelium had been removed in addition to considerable amount of secretion. The mass was composed of conglomerates of round eosinophilic cells with round nuclei and almost no terminal substance. However as interrupted and by broad thin striae blood vessels and large granulated round eosinophilic cells. In addition the specimen showed hollow spaces filled with colloid which was lined by a single layer of cuboidal epithelium.

V. OSTA SUCAL (C)

## FRACTURES AND DISLOCATIONS

Mitchell, A. P. Ununited Fractures Due to War Injuries With Final Results of Operative Treatment in 100 Cases. *Brit J Surg* 9 2, 50

In sixty-one of the cases reviewed the author performed the primary operation. In only four cases had been operated upon previously by other surgeons.

The gap between the fractured ends measured 1 cm and was filled with fibrous tissue. The surrounding soft tissues showed fibrosis and bled easily. The fragmented ends were often tapered brittle and sclerosed.

Local causes for non union were primary loss of balance, fifty five cases; displacement, twelve cases; sclerosis and latent sepsis, five cases; sclerosis with plating and wiring, five cases; sclerosis and gap, twelve cases; and sclerosis alone, twelve cases.

Pre-operative treatment was employed in attempt to overcome deformities resulting from sepsis, nerve injury or limitation of motion in the joints.

As it was impossible to determine when gunshot wounds were free from latent sepsis no operation was attempted until the wound had been healed for

twelfth month. Most of the wound were healed for fifteen months before operation was performed. Latest infection was encountered in two cases. At stage operation was done when prolonged sepsis of the original wound had resulted in serious warning of the timeliness of the operation.

At the preliminary operation by the author all sclerosed tissue was completely excised. The wound was then closed. The graft was done fourteen days later.

Infection and successful graft were not incompatible but the chief cause of failure was sepsis.

Success is impossible unless the following principles are adhered to: (1) skin incision of sufficient length; (2) the complete excision of scar tissue; (3) an extensive surface of contact between the graft and the host bone; (4) the preservation of healthy muscle bed; (5) the use of metallic or non-absorbable sutures; (6) perfect hemostasis and strict asepsis; (7) plaster of Paris immobilization until firm osseous union has occurred.

Most satisfactory was the use of autogenous medullary graft including periosteum, compact bone and medullary tissue. A few cases grafts of periosteum were used. These also proved satisfactory. Periosteum facilitates union but the loss of the graft and protect the graft if it is not again highlighted on.

The graft must be long enough to be air-tight contact from the gap. The graft employed was usually from one-third to three times the length of the gap.

The method employed by the author uses the following operation as an example. A skin incision of sufficient length was made along the postero-lateral border between the femur and the external condylar margin. All scar tissue was excised and the fractured ends were exposed of all sclerosed and ragged bone between the fragments was removed. The muscles, with the periosteum, were stripped from the bone fully six inches from the fractured ends and for practically one-fourth of the circumference of the bone. A skin layer of bone was removed with an osteotome. The full length of the exposed bone, deep enough in places to expose the medullary canal.

Interrupted sutures of strong tanned silver were passed through the reflected periosteum and muscle on either side of the prepared bed and a flexible probe was laid in the defect and bent to the exact length of the graft required. A graft equal to the length of the bent probe was removed from the outer side of the anterior border of the tibia by means of circular saw and transplanted immediately underneath the catgut lumps. The ligatures were then tied and the skin wound was closed with interrupted silk-worm gut sutures.

Plaster of Paris was used for immobilization for period of six weeks. At the end of this time the stitches were removed and a second cast applied after an X-ray examination. At the end of three months the plaster was dispensed with.

Non-union of the radius is more important than non-union of the ulna. It occurs most frequently in the lower half of the bone. The exposure of the radius for operation is done by an oblique line which separates the radial tendons of the wrist from the extensor carpi ulnaris and extensor digitorum. To secure proper alignment it is necessary to lever the lower fragment away from the ulna and rotate it into the separated position.

The graft is placed preferably in the posterior surface of the fracture above the level of the proximal articular surface. The proximal fragment is completely aspirated and the distal fragment is protected. A modified intramedullary peg proved most satisfactory. One end of the graft is appended to the middle of the proximal fragment and the other fits distal gutter made in the short distal fragment.

Union is of frequent occurrence. In some cases the distal end is so tight that bone-grafting is unnecessary. Non-union is in the lower part of the shaft. Little effort is to be made of the hand.

Non-union of the humerus occurred in ten of the thirteen cases. Non-union is more frequent in the humerus than in any other. The reason of difficulty of union is the imperfect bone graft cannot be so generally employed in the humerus as in the radius, ulna, and tibia and bone-grafting is of little value regardless of any better than most successful method of the top cut operation.

In fractures of the tibia with intact fibula there is usually little displacement. In fractures of the tibia with fracture of the fibula, the opposite point the displacement is more marked and is frequently angulated. The lower fragment usually shows certain degree of rotation on the long axis of the bone resulting in internal or external displacement of the foot.

Non-union of the femur is rare. The art of reduction in the author's three cases was about the middle third of the shaft.

Seven graft fractures occurred in the series of eighty-three cases. All but one were tibia-fibula graft.

JOHN MERRILL, M.D.

Merrill, W. J. The Davis Method of Reduction of Congenital Dislocation of the Hip Joint. *J. Bone & Joint Surg.* 1905.

Davis' method of reduction of congenital dislocation consists of four phases.

In the first phase the child is prone with the legs to be manipulated hanging down close to the sides of the table. An assistant fixes the pelvis by making pressure on it downward and toward the operator. A second assistant, under the direction of the operator, grasps the foot and knee, flexes the knee, flexes the thigh on the abdomen, rotating it inward, and makes pressure toward the femoral head in the line of the femoral axis while keeping the thigh close to the trunk. At the same time the operator exerts pressure upon the trochanter downward and toward the ischial tuberosity. Internal rotation elicits the Y-ligament and the external rotators.

During the second phase the operator grasps the knee and trochanter, extends the thigh down and toward the transverse plane of the pelvis, abducts the thigh and makes pressure on the trochanter toward the acetabulum, at the same time gently rotating the thigh in and out. If the head then does not cross the brim into the acetabulum, the leg is placed in the position of the first phase and the head is pushed downward to the obturator groove. Resistant cases often require long continued pressure to carry the head across the brim or through the obturator groove.

When the head is at the thyroid foramen, external rotation and extension are made to carry the head upward through the cotyloid notch. This last step completes the third phase.

In the fourth phase a cast is applied. This includes the entire extremity and the thigh of the opposite leg. When the dislocation is unilateral it is extended also to the lower thorax of the opposite side. The same form of dressing but without the lateral upward extension is used for bilateral luxations. The final position in the cast case is one of flexion, internal rotation, and abduction of the thigh.

The author states that in resistant cases D vis used extreme flexion, abduction and internal rotation until the resistant structure yielded, and then forced the head into the acetabulum.

Flexion, abduction, and rotation were maintained until the X-ray and other clinical evidence indicated that the head, neck, and acetabulum would sustain weight bearing. The first cast was removed at the end of three or four weeks. Casts or splints or an abduction brace maintained the desired position until the roof of the acetabulum was capable of retaining the head.

Each case is handled according to the condition found. There is no fixed time for bringing the leg to the midline and establishing function.

JOSEPH R. MINCKELL, M.D.

## **SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.**

Brandt, G. The Treatment of Acute Osteomyelitis (Zur Behandlung der akuten Osteomyelitis). *Dtsche med. Wchschr.* 1922, xlviii, 97.

At the Halle clinic osteomyelitis has been treated in various ways by the different directors (Braman, Schmieden, Voelker) during recent years. For the purpose of subjecting to critical analysis the question whether the abscess should be opened with chisel or by simple incision, the author collected the material of the clinic for the last twenty years (304 cases in which there were seventy-eight deaths; mortality of 5.65 per cent).

He concluded that in the majority of cases of acute osteomyelitis incision of the subperiosteal abscess is sufficient, chiseling of the medullary cavity being necessary in only a small number. The latter may be done also in a secondary operation. The

dismemberment and progression of the phlegmon of the soft parts and joint complications must be taken into consideration first of all. The bone should be chiseled open when the cortex is compact (old patients, rachitic children). The more extensive the subperiosteal process, the more readily may it be assumed that the outflow of pus through the Haversian canals is sufficient and that the process is localized chiefly at the periphery of the bone.

VON REINWITZ (Z)

Georgle. Osteotomy or Osteoclasis? Also a Discussion of the Springer Operation (Osteotomie oder Osteoklasie? Zugleich Beitrag zur Springerschen Operation). *Arch f orthop. Ueill-Chir.* 9, 23, 40.

After having twice experienced infection of an osteotomy wound, the author prefers osteoclasis, a procedure which is all the more satisfactory when the proper treatment in the florid stage of the rachitis has been carried out. Under such conditions the new methods of Springer and Loeffler are unnecessary. As the early treatment of the rachitis is even more important than the early treatment of the deformities, the author admits to his hospital for crippled infants 6 to 8 months old. *Schwarz (Z)*

Goljanitzki, I. The Surgical Treatment of Traumatic Pseudarthrosis. Two New Methods of Operation (Zur chirurgischen Behandlung von traumatischen Pseudarthrosen. Zwei neue Operationsmethoden). *Wenys Chir. Arch.* 9, 14, 5.

A successful result is dependent not only on the structure of the transplant but also on the method of transplantation. In four cases the author obtained no result with an autoplasmic bone peg.

In the recent war it was noted that, in spite of associated injury of the soft parts, virulent infection, the expulsion of numerous sequestra, and insufficient immobilization, bony union of gunshot fractures occurred more frequently following extensive splinting than when the bone was not greatly shattered. As this indicates that the regenerating power of bone is greater the greater the separation of continuity Goljanitzki has introduced the principle of greater traumatization as a new factor in the treatment of pseudarthroses in cases with extensive cicatrices, considerable degeneration of the ends of the fragments, and doubtful asepsis.

As much of the diastrial tissue as possible is removed, the fragments are somewhat freshened, and then, with chisel or bone shears, an adequate longitudinal splitting of the bone ends up to the opening of the marrow cavity is done. When the diastasis is slight the impaction of the fractured ends of the bones in opposing slits is successful, but when the intervening space is larger it is filled with free bone fragments taken from the same site or elsewhere. Two pseudarthroses of the leg, two of the forearm, and one of the upper arm, and one flail joint of the elbow were treated by this method with good results.



previously divided anterior layer is sutured longitudinally over the hemorrhage. The muscle is not retracted, its ends draw part of themselves and the extravasated blood forms the new connection.

Following the operation a plaster-of-Paris dressing is applied in the corrected position and left on for three weeks. By the end of three weeks the extravasated blood is transformed into a soft substitution tissue. The after-treatment consists merely in methodical lateral flexion of the head and drawing back of the shoulders. This should be continued for three months.

Subsequent examination of patient is operated on in the manner described has shown excellent permanent result. PATTERSON (2)

Hamilton, G. An Operation for Lengthening Bone. *Trans. Sect. J. M. D. 2, 1891, 203.*

Hamilton has lengthened the femur in two cases. In one, the increase was in and in the other, little more. These patients benefited from his observation.

The technique consisted in dividing the femur and sliding one fragment on the other until the desired length was obtained.

It is generally believed that the same result may be obtained gradually as by Potts' method but in the author's opinion the shortening of the soft structures could make this impossible.

F. J. BRANTZKE, M.D.

Kropfeld, S. M. Experiments in Bone Transplantation. (*Experimentelle Beiträge zur Frage der Knochen transplantation*). *Verh. Med. Ges. Göttingen* 9, 1904.

Ununited fracture of the neck of the femur has always been a difficult condition for the surgeon. In 1903, Lane employed screws in case of this kind. Later Koch obtained good results with an ivory peg. In 1903, Lane transplanted the fibula in case in which the tibia had been destroyed by osteomyelitis. In 1904, Albee published large number of experiments on the transplantation of bone. In Holland, Voordenbos has brought the method into favor.

It is still uncertain whether bone transplant tattoo gives perfect cure in fracture of the neck of the femur. The author has studied in particular the questions whether it is necessary or advisable to leave the periosteum on the transplant, and whether living bone possesses advantages over dead bone. He experimented on dogs in which he fractured the femur just beneath its head. Eleven such experiments with transplantation of the fibula failed without periosteum are reported in detail.

The microscopic examinations show that signs of necrosis appear very early in the transplanted fibula. At the end of two weeks the greater part of the transplanted bone is dead. There is still some doubt regarding certain zones lying close to the outer margin. That the groups of cells around the haversian canals remain alive has not been proved. It is practically certain that at the end of about one

month the last cell groups are dead, but it is possible, of course, that here and there a cell group has escaped necrosis. The greater part of the periosteum of the fibula remains alive. After a short time the rich cellular layer of the periosteum begins to proliferate. At first the outermost fibrous tissue layer is pressed upward, whereupon the cells in this situation vanish. At the same time this tissue sets up resorption in the transplant. Large lacunae are formed, and free giant cells make their appearance. The same tissue together with blood vessels and connective tissue, grows into the haversian canals, the latter widen out into large spaces in which resorption takes place.

New bone formation is now seen. Not only the surrounding bone but also the transplanted periosteum begins to form new bone. At first there is a distinct difference between the new bone formed from the periosteum and that formed from the surrounding bone. The same destruction and building up occur in the bone marrow of the transplant. Thus the entire transplanted piece of bone is slowly destroyed and replaced by new bone. It is difficult to determine how long this process goes on. The specimens show that it is not completed at the end of six months.

The bed of the transplant reacts in a similar manner. The formation of trabeculae begins rather early in the neighboring compact bone and is more marked on the side facing the transplant than on the upper side. Later the transplant becomes beaded in network of spongy bone which joins a newly formed layer. The same is true of the preparations transplanted about periosteum as well as of those with periosteum. Of course, the former there can be periosteal proliferation and the entire process of destruction and rebuilding takes place from the neighboring bone. A comparison of the specimens shows that in each case the process is rapid. It is to be remembered that in the transplant without periosteum the osteoblast-bearing tissue is not removed but requires some time for regeneration.

As regards the head of the femur the specimens show that for the most part it remains alive. It is not known definitely how much time is required for regeneration when the transplant is without periosteum as this depends on the extent of the necrosis and on infection. The cartilage of the head of the femur remains alive. It seems to be established that in man the layer of osteoblasts remains attached to the periosteum, just as in bone regeneration following subperiosteal resection of rib. Conditions seem to be the same when the transplant is taken from the tibia. I conclude the author states that fracture of the neck of the femur in ivory transplant serves as well as bone transplant. Koch (2)

Michelson, L. A Contribution to the Study of Bone Transplantation. (*Contribution à l'étude de la transplantation osseuse*). *J. de Med. 9, 1906.*

The author has made an experimental and clinical study of the application of bone transplantation to the repair of the metacarpals and phalanges. The

clinical study was based on a case of metastatal transplantation performed by Cusko and the experimental transplantation was done on dogs. Cases reported in the literature are also reviewed.

The histologic examinations in the experimental cases showed large spaces between the host and the transplanted bone in which there was no osteoblast. The disappearance of osteoblasts is certain evidence of the death of the corresponding part of the transplant.

Osteoblasts are found in the immediate vicinity of the peritoneum, near the medullary cavity and in some of the host's arterial canals. Some of them are evidently disappearing, but others (especially those near the peritoneum) are developing. It is possible that the latter are nourished by osseous but it must be admitted that when a segment or entire bone is transplanted, the transplant also disappears.

In the cases of autotransplantation done in the author's experimental work there was always a tendency toward absorption, neither segment or an entire bone was used. This arose however according to the type of transplant. When there was good contact with the host bone only histologic examination showed the process of absorption, but when contact was imperfect the absorption was

marked. When an entire bone or a transplant absorption was much slower. From these facts it seems reasonable to conclude that the agents of absorption are not cells of the transplant but remain alive and become changed into osteophages. The latter may be derived from the host bone or the connective tissue in the cavity.

Sikhsen's findings in experimental work about bone transplants now shows him that total autotransplants die and become absorbed.

The foregoing applies to fresh bone transplants. Dead bone transplants tend to become eliminated. If elimination does not occur they become encrusted and their absorption is slow.

The histologic examination shows not only that transplants die but also that when there is intimate contact between the transplant and the host bone absorption is retarded. In the latter case the transplant persists in its first form constituting a framework for the new bone formed by the host bone. The new bone is produced by substitution of the old bone. The stage of replacement of the transplant is preceded by resorption of the bony canal.

The author applies his findings to the various types of operations on the hand.

W. A. BAY

## SURGERY OF THE SPINAL COLUMN AND CORD

Goette, C.: The Diagnosis of Traumatic Diseases of the Spinal Column and "Innervationsverletzungen" (Schwund) (The Diagnosis of Traumatic Diseases of the Spinal Column and the "Innervation Lesions" (Schwund)). *Arch. f. Klin. Chir.* 9, 1935, 73.

The author reports the results of his studies of diseases of the spine in wounded soldiers: (1) organic diseases of the spine without nervous disturbances; (2) organic diseases of the spine with nervous disturbances; (3) functional neuroses without organic disease of the spine.

Isolated fractures of the vertebral bodies are frequently unrecognized as the first symptoms may be remarkably slight fractures which the vertebral processes are broken off are also often diagnosed erroneously. In many cases the breaking off of the transverse process is an indirect fracture due to sudden muscle pull and tearing. These unrecognized cases the condition is wrongly regarded insufficiently vertebrae.

The pathology of compression of the intervertebral disks is not definitely known. Measurement of the distance between the vertebrae gives some clue regarding the presence of the condition. It is very difficult to determine the loss in thickness of the disks exactly. Compression of single vertebrae is very rare. Gunshot fractures are easy to diagnose from their results.

With regard to inflammatory conditions of the spine the author states that in cases of tuberculosis

it may be difficult to make a diagnosis from the early symptoms and the question of trauma may further increase the difficulty. Chief among the chronic deforming inflammations is spondylitis deformans. This is well known and has been frequently described. It is found most commonly in the thoracic or the lumbar spine. It is a primary degeneration of the cartilaginous disk with irritation Hechter's chronic rigidity and Strömstedt's ankylosis of the spine are well known. Trauma is often recognized as the cause. Congenital predisposition frequently plays a role.

Injury to the spinal column with nervous disturbances, heightened nervous susceptibility to disease must be warned. Functional neuroses can be associated with an onset of organic disease of the spinal column. Even slight organic changes in the spine in scoliosis are often associated with nervous symptoms. Without doubt an important role is played by meningitis serosa cerebrospinalis.

Pajr's study of the pathology of the spine throws light on its developmental disturbances and susceptibility to disease. Multiple sclerosis is an important factor in diseases of the spine and organic nervous diseases. Persons with functional neuroses following accidents and without organic spinal disease are neurotic. They are especially predisposed to functional diseases. Schwann's insufficiently recognized the trauma is uninterrupted from slight nervousness to mental disease originating in trauma.

Koen (2)

Brown, L. T. Beef Bone in Stabilizing Operations on the Spine. *J Bone & Jnt Surg* 9 19 17

Brown reports the use of a heterogeneous bone transplant, such as beef bone in stabilizing operations on the spine.

Thirty-four cases are cited, all of which were operated upon by members of the orthopedic staff of the Massachusetts General Hospital and by practically the same technique. Twenty-nine were cases of tuberculosis of the spine, four were cases of fracture of the spine, and one was a case of anterior poliomyelitis.

Twenty-one of the patients were males, and thirteen were females. Their ages ranged from 3 to 47 years. The duration of symptoms before operation varied from six months to fifteen years. In 20 per cent of the cases of tuberculosis two distinct foci were found in the spine.

The splints were made from beef ribs cut at right angles to their flat surfaces to form two cortical layers with cancellous layer between. The rib was boiled for an hour before the splint was removed. The splint was then boiled twice for an hour at twenty-four hour intervals. The operation consisted in most cases of a combination of the spine splitting and the fusion operation. The usual postoperative care was given.

In review of the cases from one to four and one-half years after the operation it was found that nineteen of the patients were in excellent condition, four had died, four were not benefited, and four were operated upon again, two because of fracture of the splint and two because of secondary foci. In three cases the splint was removed. In ten cases an X-ray examination made from one to four years after the operation showed the density of the spine and splint to be unchanged. In eight there was no change in the size of the splint. In one case slight hypertrophy of the splint was suggested. In thirteen cases the X-ray showed that the splint was in place and in five cases it revealed break; the splint.

In the cases so operated upon no evidence of irritation or inflammation was found around the bone splint. In one case the cancellous portion of the splint was replaced by connective tissue, and in two cases the splint seemed to be attached to the spinous processes. In no case had the spinous processes become fused together. Histologic examination of specimens obtained at these operations showed no evidence of new bone formation in two cases, slight evidence in one, and active proliferation in one. The author's conclusions are:

1. The use of beef bone does not increase the operative risk.

2. The splint is tolerated by the body.

3. There are certain technical advantages in the use of beef bone splints.

4. A disadvantage of the method is that regeneration is slow.

5. The dead bone is a sequestrum.

JOHN W. FOWLER, M.D.

Boileau, A. Libermiste, J., and Cornil, L. A Case of Complete Section of the Dorsal Cord by Direct Contusion. An Anatomopathologic Study (Sur un cas de section complète de la moelle dorsale par contusion directe étude anatomopathologique). *Rev. neur.* 9 22 902

Since the war various reports have shown that complete section of the spinal cord may be followed by functional recovery in the lower spinal trunk and that the automatic and reflex activity of the segment below the lesion may be indicated by a series of manifestations of great physiological interest.

The authors case was that of a man who received a gunshot injury in June 1918 and survived until January 1921 when he committed suicide. Autopsy showed a complete break in the dorsal spine extending over two segments. After a period of absolute paraplegia with retention of urine and an anesthesia extending to the ribs which persisted for about seven months the clinical picture was modified by the appearance of defensive and automatic medullary movements, reflex reactions, and erections. The tendon reflexes and the muscular tonus increased. Twenty days after the injury the tendon reflexes were absent but eighteen months later they were present on both sides and apparently increased.

Besides the reflexes of medullary automatism the authors noted in this case spontaneous automatic movements analogous to those in total section of the dorsal cord described by Libermiste. Eight months after his injury the man moved his lower limbs often without apparent cause but with precise synchronous action every ten seconds. Recovery of bladder function was indicated by the reflex micturition.

The survival of thirty-one months in this case is one of the longest on record in a case of complete traumatic section of the cord. The autopsy showed that the complete necrosis of the cord was due to direct contusion of the spinal axis caused by the passage of the projectile.

The case offers further proof that after the first period of shock or medullary coma there is a long period during which the restoration of spinal automatism is indicated by the appearance of tendinous, defensive and other reflexes. Sooner or later however the kidneys are attacked by ascending nephritis. This probably would have occurred ultimately in the authors case. W. A. BARR.

Stewart, T. G. Some Observations on the Symptomatology of Spinal Tumors and Compression of the Spinal Cord. *Med. Press* 9 8 1914 35

The author describes the signs and symptoms of lesions of the various anatomical parts of the spinal cord and gives a table showing motor localization on the spinal cord and a chart showing the segmental distribution of the spinal roots.

When the spinal fluid is cut off by compression it becomes in color below the lesion from pale straw to deep green and coagulates rapidly. This may occur



also in case of spinal tumor meningitis. I have seen disease.

The lesion of an extra-meningeal lesion can be determined on the basis of the local signs of spinal deformity and root involvement and by the remote signs of changes in the reflexes.

Disturbance of the sympathetic system may be caused by lesions of the eighth cervical root or the upper two dorsal roots. The symptom may be due to irritation (ophthalmos and blushing of the pupil) or paralysis.

The author describes the symptom and differential diagnosis of various forms of compression paraplegia as follows:

**Leptomeningitis.** The cause of this condition is generally unknown but may be syphilitic. Leptomeningitis usually occurs after the fortieth year of age (chronic leptomeningitis). Its thickening may cause pressure on the cord or interfere with its circulation. The symptoms are widespread and indefinite. There is a slight degree of bilateral spastic weakness associated with difficulty in micturition, subjective sensations of numbness and tingling around the waist about the level of the sensory roots. The onset of the condition is gradual and progresses slowly. There are adhesion and the cerebrospinal fluid is obstructed the dor may be distended but the constant pulsation is usually absent and breast below the obstruction. The sacrum may be adherent to the cord. A local collection of cerebrospinal fluid may form a meniscus cyst. These cases begin with diffuse symptoms, but develop signs of definite level of compression.

**Tuberculous meningitis.** This condition may be due to syphilis or tuberculosis. In other cases the cause is unknown. When it is due to phyl it is usually secondary to spinal foci or local gummata. Conditions affect the cervical and lumbar spaces generally result from the direct extension of spinal foci. Root symptoms occur first and as the most prominent. It is followed by radicular pain, atrophy and loss of sensation. Cord symptoms appear in one or three months after the onset of root symptoms. When the condition is unilateral there is Brown-Sequard syndrome when it is bilateral compression paraplegia results.

**Circumscribed slowly growing intrathecal tumors.** These growths are neurofibromata, fibrosarcomata, endotheliomata, or pyromyomata. They are attached to the lateral side of the theca, to the arachnoid near roots, or posteriorly. They tend to grow in a spindle shape parallel to the cord, between the anterior and posterior roots, and inside the lateral columns. The tumors are located in the cervical and upper dorsal regions. The course of the symptoms depends upon the part of the cord compressed. As the pressure increases local paraplegia with motor and sensory symptoms and change in the reflexes develop. There is no sphincter disturbance when the Brown-Sequard syndrome is present but there is present when the pressure is bilateral.

**Diffuse intrathecal tumors.** These growths are generally sarcomata of the sacral or dorsal regions. Dorsal region tumors are usually secondary to medullary growths. As a rule the growth develops before the twentieth year of age. Root symptoms are early severe and rapid. After the development of cord symptoms the lesion rapidly becomes complete. Sacral region tumors cause perineal pain, loss of sensation in the sacral region, incontinence of urine and feces, sitting and paralytic of the lower extremities and loss of the deep reflexes.

**Extrathecal growths.** These include hydatid cysts, sarcomata, fibrosarcomata, endotheliomata, pyromyomata, and lipomata. The tumors are in connection with the roots or the theca in the middle dorsal region. Fibrosarcoma, and endothelioma occur most frequently before the ages of 30 and 50 years. Lymphosarcoma and round cell sarcoma occur about the age of puberty. The spinal symptoms consist of pain in the back referred to the region of the tumor. Local tenderness and deformity of the spine are rare. No root symptoms. Cord symptoms are usually bilateral and begin gradually. Rapidly growing extrathecal tumors are usually sarcomata and carcinomata. Root symptoms are practically absent. Present and spread rapidly from one side to the other. Bilateral cord symptoms develop soon after the root symptoms, and complete transverse cord lesions quickly appear.

**Diseases of the plexus.** Such may give rise to compression paraplegia. These conditions are tuber culosis, sarcoma, and carcinoma. The author describes the symptoms and course of tuberculosis of the spine and its relation to compression paraplegia. The tuberculosis has an compresses the cord gradually to the vertebral column or tuberculous pachymeningitis may be set up by the formation of adhesions between the cord meninges and diseased vertebrae. Relief of the pressure may lead to a temporary recovery of function. Myelomeningitis and also the level of the lesion points more to an infection in this than simple compression. Carcinoma of the spine is almost always secondary usually to cancer of the breast, stomach, testis, rectum, uterus, prostate, lungs, kidneys, suprarenals or thyroid. Metastases occur within eighteen months to five years. Metastasis may be more or less generalized, affecting several vertebrae and pelvis bones. Sarcoma is the primary or secondary and tends to remain more localized and it grows more slowly than carcinoma. Secondary sarcoma spreads rapidly. Sarcoma may press on the vertebral canal without invading the spine.

**Extradural cases.** Root symptoms are followed by an increase in movement of the same side of the cord and later by an increase of the other side. definite segmental loss is a local extension of the symptoms upward and almost always. Cord pressure symptoms are progressive, draw attention to sensory loss may be or root loss is more segmental.

In myelomeningitis the symptoms are usually referred to the lumbar or cervical regions, but occasionally

ally to the bulbar. Local symptoms precede the onset of cord symptoms, but the sensory loss is different from that due to a posterior root lesion. Trophic disturbances are severe and may appear early. The Brown-Séquard syndrome is rare. Definite segmental loss is unusual but upward extension of the symptoms is common. Cord compression symptoms are frequently remote. Dislocation sensory loss may occur.

WALTER C. BAKER, M.D.

Adson, A. W., and Ott, W. O. The Results of the Removal of Tumors of the Spinal Cord. *Arch. Neurol. & Psychiat.* 9: 430.

The results following the surgical treatment of spinal cord tumors depend upon the duration of the symptoms and the position, level, and type of the tumor. While the histories of patients with spinal cord tumors are not always constant, they suggestively indicate the first clue to the presence of such lesions. Sensory disturbance is usually the first symptom. This is associated with motor disturbance and followed later by exaggerated reflexes below the cord segment involved.

The first operation in the removal of a tumor of the spinal cord is performed by Horsley about thirty days after onset. Since then many such tumors have been removed but many have also been overlooked. The rate of progress of the disease depends on the position and type of the tumor. Intramedullary neoplasms usually progress slowly. Hard encapsulated tumors cause considerable pressure and marked paralysis. Few months' tumors of the cord may occur in any part of the spinal canal, their average incidence being highest in the thoracic region, next highest in the cervicodorsal and lowest in the dorsolumbar region. While spinal puncture is of value in the diagnosis, intramedullary tumors cannot be distinguished thereby from intramedullary tumors.

A review of the records of the Mayo Clinic shows that thirty patients were operated for spinal cord tumor from January 9, 1902, to April 9, 1907. Sixty-four were males and forty-eight were females.

Ninety-seven of the operations in this series were performed from 1906 to 1912 and 177 were performed from 1906 to 1912. For detailed study of the diseases the series were divided into nine groups: (1) extradural tumor, 4; (2) intradural but extramedullary, 1; (3) intramedullary, 1; (4) chronic meningomyelitis, 7; (5) syphilis of the spinal cord (vascular lesions), 3; (6) echinococcus cyst, 1; (7) tuberculosis of the cord, 1; (8) glioma of the cord, and (9) cerebellospinal cord tumor. In four of the cases of chronic meningomyelitis 1 tumor was found at autopsy.

The average duration of symptoms was twenty-eight months in Group 1, forty-five months in Group 2, forty-five months in Group 3, and forty months in Group 4. The other groups are so small that a definite average cannot be obtained.

Root pain was present in eight cases (57 per cent) of Group 1, in twenty (66 per cent) of Group 2, twenty (70 per cent) of Group 3, and in thirteen (54 per cent) of Group 4. In Groups 5, 6, 7, 8, and 9 there were four cases of root pain (44 per cent).

In fifty-nine cases the tumor was in the dorsal region, occasionally extending into the cervical and the lumbar areas. In eighteen cases it was in the cervical region, in nine in the lumbar region, and three in the sacral region. In twenty-three no tumor was found, the symptoms being due to inflammatory process.

In a series of laminectomies, 1 tumor was removed in eighty-five (76 per cent). Forty-three of the tumors (5 per cent) were removed completely, twenty-six (30 per cent) were removed partially and sixteen were not removed. In the twenty-seven cases no tumor could be found at operation, in four of these tumors are demonstrated later. Seventy-nine patients are living, twenty-two are perfectly well and work, seven are improved and able to do a little work, twenty-one are unimproved but not at work, and fourteen are helpless. Fifteen patients could not be traced. Seventeen died in the hospital, and seventeen died subsequently at home. The average time between operation and death was 1.5 years.

## SURGERY OF THE NERVOUS SYSTEM

Lewis, D. and Miller, E. M. Peripheral Nerve Injuries Associated with Fractures. *Ann. Surg.* 9: 101, 1918.

Nerve injuries are associated with fractures much more frequently than is generally supposed. They are overlooked because of haste and incomplete examination of the fracture.

The injury may result from the slightest contusion from which the patient rapidly recovers. Anatomical division and callus inclusion both demand surgical interference.

It is often impossible to differentiate even between physiological interruption of the nerve current and anatomical division of the nerve by the most careful

neurological examination, and there is a tendency to wait too long for spontaneous recovery.

When recovery has not begun within three months after the injury the injured nerve should be explored and any necessary operation performed.

Neurolysis is the operation which is most frequently required. Resection of the humerus should no longer be done to permit end to end suture of the musculospiral nerve. In such cases tendon transplantation should be performed.

The prognosis of injuries of the musculospiral nerve is very favorable.

In the late ulnar nerve palsy with cubitus valgus transposition of the nerve to the front of the elbow

indicated. When bony outgrowth came paralysed, their removal and the placing of the nerve in a healthy bed may be sufficient.

II A. McKEEVER M.D.

OTT W. O. Experimental Results of Cable Graft and Tubes of Fascia Lata in the Repair of the Peripheral Nerve Defects. *Minor N. Vol.* 93

Experimenters conducted for the purpose of comparing the rapidity and completeness of regeneration obtained by the method of bridging defect in peripheral nerves, the use of cable graft and the use of fascial tube graft. The results were compared also with those obtained by end-to-end suture. Twenty-six experiments were conducted, including four controls with end-to-end suture. Eleven experiments cable graft of an autogenous sensory nerve was employed and in seven there tube of autogenous fascia lata. The length of the gap bridged by the cable graft and the tubes of fascia lata was the same.

The operations were performed on dogs under ether anesthesia and with sterile technique. The sciatic and musculospiral nerves were used. In the control experiments of resection and suture the nerve was exposed and sectioned with sharp scalpel and immediately sutured with fine silk. In the experiments with cable grafts the nerve was exposed 4-cm portion resected, and an autogenous cable graft of several strands of the superficial radial or the internal cutaneous nerve or both was inserted. The size of the graft was never less than three-fourths that of the nerve, but which it was microdissected very fine silk, one third of a strand of No. 1000 silk on a No. 1 cotton thread was used. Usually two tubes were placed at each end of each strand in order that the fascial of the graft might accurately approximate those of the nerve into which the graft was inserted. Fascial tubulization the method described by J. H. and L. W. as followed. The smooth side of the first lata tube from the same dog was placed thus to form the lining of the tube. The box of the tube was made to fit that of the nerve exposed.

The animals were examined often, the time of the disappearance of paralysis, the healing of ulcers, trophic of muscles, etc. being noted. Animals with infected wounds were discarded. Necropsy performed soon after death on those that died from causes not affecting the conditions of the experiments. Those that lived until the termination of the experiment were killed under ether. The animals were etherized, the muscles supplied by the nerve experimented on were exposed by reflecting the skin and the degree of trophic muscle tone, color, power of voluntary motion, and response to electrical and mechanical stimuli were noted. The nerve proximal and distal to the graft as well as the graft, was dissected free the nerve as 1.5 to 5 cm proximal to the graft, and mechanical, galvanic and radio station station as applied to the cut end

of the distal segment. After these examinations had been completed the animals were killed with ether and the nerves removed for microscopic study.

Of interest in the four control experiments in which resection and suture were done were: (1) the absence of adhesions around the suture line, (2) the normal appearance of the animals after from four to six months and the healed condition of the ulcers, (3) the absence of muscular atrophy, (4) the normal response to pinching and electrical stimulation applied to the exposed nerve proximal to the suture line and (5) the normal microscopic picture of the nerve distal to the suture line.

In the eleven experiments in which gaps were bridged by cable grafts the animals progressed well, but not so well as those in the control experiments with end-to-end suture. The ulcers healed, the paralysis disappeared, and the animals apparently became normal after from eight to ten months. In seven instances the estimated return of action after three hundred and thirty-four days or longer was 70 to 85 per cent. Proximal neuromas were present in all cases but were smaller than in experiments with fascial tubes. Adhesions to the graft were few and fewer than in the experiments with fascial tubes. Fibrosis was less in the graft was not seen macroscopically, the spaces between the fibers were filled largely with loose areolar tissue.

In the eleven experiments with fascial tube behavior all the animals remained paralysed and the ulcers were unhealed. In the first two instances in which the animals lived more than three hundred and thirty-four days the estimated return of function was 3 and 10 per cent respectively. The proximal neuroma was very large in every case. Adhesions to the graft were dense and firm, and the graft could be separated from the surrounding tissues only with difficulty. Large amounts of fibrous tissue were seen macroscopically along the graft, in most of the old cases as much as 75 per cent of the area of a cross section made up of fibrous tissue.

In the four experiments with fascial tubulization it appeared that in late stage the fibrous tissue which had proliferated inside the fascial tube and the fascial transplant contracted and strangulated the enclosed nerve fibers, thus preventing the complete return of action to the nerve. This process explains the failure of fascial tubulization clinically and may prevent the return of action when cable grafts were used especially if the graft was placed in a bed of scar tissue.

The conclusions drawn are as follows:

Experimentally, autogenous cable graft in a group of 4 cm results in satisfactory return of function, they require longer time than end to end suture and the return of action is not so complete.

Tubes of autogenous fascia lata used to bridge gaps of 4 cm result in delayed and incomplete return of function, if any at all.

Regeneration takes place through the fascial tubes. At first the nerve elements are abundant, but later they are largely replaced by fibrous tissue.

McGuire, E. R. and Burden, J. F. An Unusual Case of Sarcoma of the Median Nerve. *Surg. Gynec. & Obst.* 9: 437, 453.

The patient was a woman aged 40 years who had been perfectly well until five years previously when she noticed swelling on the anterior surface of the right forearm, midway between the wrist and the elbow. This swelling was not painful or tender. Five weeks before admission to the hospital, the arm began to swell in the region of the tumor, this swelling continuing until the arm was half again as large as the left arm and severe pain developed.

Operation disclosed mass 8 in in diameter involving the median nerve. The nerve was divided at either end of the tumor and removed. The resulting gap measured more than 9 in.

The tumor was diagnosed on microscopic examination as a rapidly growing, irregular spindle cell sarcoma originating in neurofibroma.

Five weeks after the primary operation the patient returned with another swelling at the site of operation. An incision was made for diagnosis and another sarcoma found.

After extensive X ray treatment it was necessary to amputate the arm. The second tumor was also a spindle cell sarcoma. H. A. McKimsey, M.D.

Linell, E. A. On Solitary Fibromyosarcoma of Peripheral Nerve Trunks, with a Description of Case of Cystic Fibromyosarcoma of the Median Nerve. *Brit. J. Surg.* 31: 2, 29.

The patient was a woman 4 years of age who had a lump in the right arm which had been growing gradually for four years. When first noticed, the growth was the size of a hazel nut but at the time it was seen by the author it was as large as a pigeon's egg. The only symptom was occasional shooting pain from the site of the tumor down into the middle finger.

Examination revealed well defined, painless, fusiform swelling on the antero internal aspect of the upper arm slightly above the internal condyle of the humerus. The tumor was freely movable laterally but not in the long axis of the limb. It was unattached to the skin, and elastic to the touch, but fluctuation was not demonstrated. Its essential connection with the median nerve was not considered on account of the complete absence of motor and sensory symptoms. From its proximity to the line of the nerve it seemed reasonable to ascribe the shooting pains in the median area to pressure. A diagnosis of soft fibroma arising from the deep fascia was made.

At operation, November 1931 the tumor was removed. Both resected ends of the nerve appeared quite normal. End to end anastomosis was done with the elbow flexed, and the arm then maintained in this position.

At the time this report was written sensation was beginning to return but there was as yet no evidence of motor recovery.

The author discusses the histology of the tumor and shows six photomicrographs of various areas.

A brief historical survey of solitary fibromyosarcoma of peripheral nerve trunks is given.

The conclusions drawn are as follows:

A hemorrhagic cyst of spontaneous origin arising in a peripheral nerve may be benign.

In the absence of more definite evidence of sarcoma, such as infiltration of the nerve above and below the lesion or adherence to surrounding structures, it would have been advisable in the case reported merely to puncture the cyst and remove as much as possible of its wall without interfering with the continuity of the nerve bundles, thus avoiding the risk of incomplete regeneration after resection and end to end suture.

CARL R. STEDER, M.D.

Gomom, V. The Surgery of the Sympathetic Nerve (Sympathectomy). *Spatial* 93: 24, 54.

Gomom briefly describes the very poorly known physiology and pathology of the sympathetic nerve and the cervical sympathectomy first done by J. Boulay in 1896 which was later applied with different results by Jönneson as total and bilateral resection of the cervical sympathetic in Basedow's disease, epilepsy and glaucoma.

Gomom states that the surgery of the sympathetic nerve ought to be better known in Roumania as the cervicothoracic sympathectomy also was done first by Jönneson and himself (both Roumanians) in the year 1906. The patient, who had angina pectoris, has remained well up to the present time. The abdominal sympathectomy was done by Jaboulay in 1897 and later by Leriche and Hæresen. Gomom, in the year 1934, was the first to extirpate the semi-lunar ganglia, an operation he called "solarrectomy" and applied successfully to the treatment of tabetic crises. The sacral sympathectomy has been practiced with varying results by Jönneson since 1914 in vaginismus, scabies, lightning pains, and tics, and was applied with the best result by Gomom for the relief of pelvic pain due to inoperable cancer of the uterus. STOLANOFF (Z).

## MISCELLANEOUS

## CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Kirch, E. Observations on Cystic Xanthomatous Tumors and the Genesis of Xanthomatous Tumors in General (Über cystische xanthomatöse Geschwülste und die Genese der xanthomatösen Geschwülste im Allgemeinen) *Beitr path Anat allg Path* 923, 122, 75

The author has observed two interesting cases of xanthomatous blastoma, one that of a man 39 years old and the other that of a woman 7 years old. In the first case the tumor which was the size of a goose egg, developed on the medial aspect of the right knee. In the second case the neoplasm was fungous growth the size of a hen egg, on the outside of the left knee.

Both tumors had a cystic character. Their xanthomatous nature was evident macroscopically from the peculiar sulphur yellow and rust brown marbled appearance of the sections. Histologic study revealed a structure consisting of 2 elements, one sarcomatous and the other lymphomatous, the latter leading to the formation of cysts. The foam cells characteristic of xanthoma had their origin in the lymphoid endothelium.

In the first case considerable increase of the cholesterol content of the blood, as demonstrable. Unfortunately similar test as reproducible in the second case. As disturbance of the cholesterol metabolism is already present in cases of xanthomatous blastoma, the author believes that favorable conditions in preexisting tumors, such as the lymph stasis in the lymphangoma in both of his cases, xanthomatous transformation of certain kinds of cells occurs as the result of the deposit of cholesterol fatty acid esters, and that thereby blastomata may be transformed secondarily into xanthomatous tumors. Linnæus (7)

Shaw-Mackenzie, J. A. A Study in the Diagnosis of Cancer by Means of Serum Reactions. *Lancet* 9, col. 759

This article draws attention to a new test for cancer based on turbidity reaction in the serum. Saponified and ether extracts of cancer tissue were added respectively to the serum of patients who were suffering from cancer and the sera then incubated at 37 degrees C for sixteen hours. They thereupon formed permanent emulsion or precipitate, cloud or the trace of cloud in the serum. As a rule the ether extract was diluted with pure sodium chloride solution. Normal serum did not give the cloudiness mentioned.

This test is similar to that of Freund of Vienna which is based upon the observation that the isolated cells of carcinoma are dissolved by normal serum whereas the normal cells are resistant to carcinoma serum. The same is true of sarcoma. The destruc-

tion of the normal serum on the cancer cell is attributed to its fatty acids. The latter are not present in carcinoma serum.

The test was used on 136 persons, fifty-eight of whom were normal. Only 1 positive reports are not confirmed, one as a case of diabetes and the other a case of neuritis. P. W. Sweet, M.D.

## SERA, VACCINES, AND FERMENTS

Chiari, O. M. and Gampert E. The Galvanic Excitability of Motor Nerves Following the Parenteral Injection of Heterogeneous Serum (Über das Verhalten der galvanischen Erregbarkeit der motorischen Nerven nach parenteraler Einverleibung artfremden Serums) *Deutsche Zeitsch f Chirurg* 922, 122, 265

In a number of cases a pronounced sickness followed a single subcutaneous injection of serum equivalent to 1 cm of tetanus antitoxin, and there was also an abnormal condition of excitability in various muscle groups, the form of tonic clonic contractions. The course of the three cases in which these symptoms were most marked is reported.

In the first case the facial expression and trismus suggested tetanus, but ruling out this condition was the fact that the trismus appeared simultaneously with the serum reaction and the fact that the symptoms disappeared without remedial measures. In the second case there was the possibility that the patient had had local tetanus a few years previously following an injury and that after second injury he developed an exactly similar condition after an injection of serum as he did when treated by the author. The third patient developed marked swelling of the arm after the injection and became unable to separate the joint normally the patient had also been given horse serum.

These observations led to a re-examination of number of other patients who were given prophylactic injections of tetanus serum. Reactions as marked as those in the three cases described were not seen, probably because the sera used subsequently were somewhat stale and therefore had partly lost their anaphylactic effect.

The other examinations included the testing of the galvanic excitability of muscle (the determination of the threshold value of the cathode closure contraction) or percutaneous stimulation of the nerves, and the observation of Chvostek's facial nerve phenomenon and of the ulnar and peroneal nerve phenomena. After the first injection of tetanus serum and after re-injection, the galvanic excitability and frequently also the mechanical excitability of the muscles was increased. The tenacity and the duration of this hyperexcitability are subject to variations. Occasionally the condition is demonstrable only transiently. In general it seems to be proportional to the other symptoms of serum disease, but it appears

also as the only symptom of the reaction of the organism to the injection of serum.

The behavior of the threshold values of the galvanic excitability is very constant, viz. a rapid sinking following the injection of this serum and a gradual increase, protracted over a number of days to the average value. The paracutaneous injection of heterogenous serum is considered to be the cause of this change in the galvanic excitability. The other disturbances observed after the injection of serum are easily correlated with the recognized anaphylactic reaction to which the described increase in the galvanic excitability of nerves must be added as a new symptom of serum disease. It may possibly explain also the aggravation of the condition of patients with tetanus which often occurs immediately after the injection of the serum. GUTMAN (Z)

#### BLOOD

Conferenco, A. A Simple Procedure for Testing the Circulation in Gangrene of the Extremities (Ein einfaches Verfahren zur Prüfung der Zirkulation (sino-motorischer Strich) bei Gangren der Extremitäten) *Spital* 9 XII, 384

The question whether or not amputation should be done in gangrene of the extremities is often very difficult to answer. In 1907 Moscovici introduced oedymetry as a method of ascertaining the condition of the circulation. In spite of the value of this procedure, however it is necessary to seek for another as it is very painful and in some instances appears to make the circulatory condition worse. The author has tried out the following procedure, which he designates as the test with the vaso-motor streak.

With the patient standing up or lying down, a continuous line is traced from the proximal to the distal end of the affected extremity with a blunt instrument. After brief period of pallor in this line the well known red vaso-motor streak appears. If the limb is normal, the streak appears quickly and the coloring is bright and of the same intensity throughout. If the red streak stops suddenly at any point, there is no circulation below that point.

If this test is made on the four sides of the extremity it gives an exact circular demarcation of the tissue which is well supplied with blood from that which is poorly supplied. Amputation at the limits indicated by the test almost always resulted in primary healing; in no case was re-amputation necessary.

The author suggests that this procedure might be of value in indicating the site of an embolus.

WOLFGARTEN (Z)

#### BLOOD AND LYMPH VESSELS

Worowoff B D. The Conservative Treatment of False Aneurysms (Zur konservativen Behandlung der falschen Aneurysmen) *Neurol. Med. Wochenschr.* 9 I. 1908 p. Nos 2-3 p.

The author has devised an apparatus for tonometric pad pressure which is applied over the injured

vessel (femoral artery) above the false aneurysm. In one case it was possible to decrease the size of a fresh traumatic aneurysm in Hunter's canal by daily pressure for from six to eight hours. PATROW (Z)

Seneart, L., and Blum, P. A Case of Arteriotomy for Embolism of the Axillary Artery Followed by Complete and Definite Recovery (Un cas d'arteriotomie pour obstruction embolique de l'axillaire suivi de guérison complète et définitive) *Bull. Acad. de med. Par.* 9, LXXVIII, 84

From a study of all reported cases of operative clearance of embolized arteries Leparo in 1911 concluded that this treatment is of little value. Soon thereafter Mosny and Dumont reported the first case of embolotomy followed by complete success. Seneart and Blum in this article report a second similar case.

The patient was a man aged 58 years whose right arm was completely immobile, paralyzed, and without the least sensation. The condition was diagnosed as embolism of the axillary artery with complete obliteration of the vessel. An arteriotomy with resection of the embolus was decided upon. The artery was opened in the subclavicular region after section of the pectoral muscles. On dissection of the vessels several collaterals in the vicinity were found enormously dilated. The embolus was near the inferior scapular artery at the base of the axilla. The axillary artery was ligated above and below the embolus. An incision about 1/4 cm long was then made in the vessel at the embolus but no blood escaped, the lumen being completely occluded by a clot. The clot removed was 4 cm in length.

When the ligatures were loosened there was still no flow of blood. The incision was therefore extended upward. A second clot, or rather another part of the first one, was then found. This also was attracted through the wound. It was of the same size as the first portion. Immediately following its removal the blood flowed abundantly in spite of the ligature traction. After careful suturing of the arterial branch the ligatures were removed. The radial pulse appeared immediately full and strong. An hour later the cyanotic and paralyzed limb was warm and colored. For several days there were some minor Volkmann symptoms but ultimately the result was perfect and the blood pressure the same in both arms.

W. A. BARN, A

#### EXPERIMENTAL SURGERY AND SURGICAL ANATOMY

Krowe, I. Parabiosis and Organ Transplantation. *Surg. Gynec. & Obst.* 9:22, 1911, 495

The problems in connection with tissue and organ transplantation have interested workers both in the laboratory and in the operating room. The many failures occurring in the earlier period were due to the lack of asepsis, improper technique etc. but when all these factors are eliminated there still remains the unmountable obstacle prevented by

the absorption of the graft. In a great many cases in which the technique was flawless and the asepsis beyond question, a transplant of entire organs have been successful. Auto homografts have failed.

From the results obtained so far it may be concluded that the graft acts as a foreign body and meets with the same treatment from the host. The theory upon which this study reported in this article was based is that a parabiotic union removes the chemobiological differences between two animals of the same species and makes the tissues of a graft taken from one of them bear the same chemobiological relation to the host as the host's own tissues.

Experiments were carried out on young adult rats of approximately the same age and weight. During the course of the parabiotic operation frequent fatal complications were encountered, such as intestinal obstruction, pneumonia, and undernutrition with starvation of one of the pair. Ten days after the parabiotic operation the graft itself was transplanted. Half of one lobe of the thyroid gland was excised and inserted into a muscle pocket in the anterior abdominal wall of the other animal. This pocket was carefully prepared prior to the excision of the thyroid in order to reduce to a minimum any possible injury to the latter by drying or too much handling. The pocket was then closed in its layers, muscle and skin. Closure of the neck wound completed the operation.

Forty-four pairs of animals were used in the experiments. Of these, three pairs died before transplantation of the thyroid tissue, five pairs were lost, and seven pairs were decomposed to such an extent that histologic findings were worthless. This left thirty-two pairs for study. Of this number twelve pairs showed absolutely no trace of the transplanted tissue.

To a series of autografts and homografts were made, and sections of the thyroids from the parabiotic animals were studied with these. With the exception of the graft in one pair all the grafts showed marked lymphocytic infiltration with very little apparently normal thyroid substance remaining. Therefore the parabiosis did not neutralize the chemobiological differences, if anything, it seemed to make them more intense.

As the result of his experiments Kross concludes that parabiosis does not inhibit those unknown agencies which in so many instances interfere with the success of homografts of highly developed organs such as the thyroid. GROSS, E. BERNER, M.D.

Meyer, J. and Ivy, A. C. Studies on Gastric and Duodenal Ulcer. The Relation of Epigastric Hernia to Gastric Ulcer—a Clinical and Experimental Study. *J. Lab. & Clin. Med.* 9, 12, 37.

The authors' interest in the relation of epigastric hernia to gastric ulcer was first aroused by the case of a man 35 years of age who complained of pain in

the epigastrium, belching, and constipation occurring regularly two hours after meals. This patient was kept under observation for some time and also given the ulcer treatment recommended by Sippy but at the end of six weeks no improvement was noted. An operation to correct the hernia revealed a small globular mass of preperitoneal fat continuous with the omentum which protruded through a small defect in the linea alba and was adherent to the parietal peritoneum. Gross inspection of the stomach showed no evidence of ulcer. The appendix, which was also removed, was normal. Two years have elapsed since the operation and the patient is still free from symptoms.

In their experiments the authors employed four-teen dogs. In each animal an epigastric hernia was produced. During the course of the experiments the occurrence of a pocket formation in the wall of the stomach was noted. Thus, the authors suggest, might be regarded as an area of lessened resistance and a potential site of ulcer. In man it could be of greater importance because of his upright position and therefore in man might lead to the formation of an ulcer more readily than in the dog. Gastric ulcer is very infrequent in dogs and it is difficult to produce a chronic ulcer in a normal dog experimentally. The pocket formation described has either never or rarely in man or has never been reported.

The authors prefer to believe that the association of epigastric hernia and gastric ulcer is merely accidental. The incidence of such an association (3 per cent) they explain by the supposition that cases of this kind are reported because of their interest whereas cases of epigastric hernia without proved ulcer are not reported because they are relatively common.

The character of the distress in the experiments was particularly interesting because a gastric ulcer was not present. The pain was almost identical with that of gastric ulcer being dull, gnawing and intermittent. It occurred in the epigastrium one or two hours after meals, and was relieved by soda and food. One investigator ascribes the genesis of this pain to the tension exerted on the herniated omentum by the vigorous contractions of the stomach which occur intermittently. The authors concur in this opinion and believe that it is supported by the fact that alkalies relieve both types of pain, the pain of gastric ulcer and that of epigastric hernia with omentocoele, inhibiting the vigorous tonic contractions. These contractions begin one to two hours after meals, continue until the stomach is empty and then disappear until hunger period ensues. The theory mentioned is further supported by the fact that coarse food excites and increases the pain in cases of epigastric hernia.

In making summary of their work the authors state that they are unable to demonstrate experimentally in dogs that epigastric hernia with omentocoele is a causative factor of gastric ulcer. They suggest that the tendency to local pocket formation in the wall of the stomach brought about by the

tugging of the omentum may be an etiological factor of gastric ulcer in man. They believe that the association of gastric ulcer and epigastric hernia in man is accidental, the hernia having no direct etiological relationship to the ulcer. Epigastric hernia does not cause hyperacidity; the gastric findings in such cases are within the normal variation. In cases of epigastric hernia with gastric symptoms operative is indicated definitely.

GEORGE E. BERRY, M.D.

### ROENTGENOLOGY AND RADIUM THERAPY

Kirklin, B. R. The Roentgenological Study of the Pathologic Gall-Bladder. *Am J Roentgenol* 9 12, 713

A large number of gall-stones cast no shadow in the roentgenogram, not even as much as the bile in which they are contained. George has called attention to the fact, however, that while a single stone may not cast a shadow several stones have a density which, with the changes in the gall bladder wall, produces a characteristic shadow easily recognized when a reasonably good technique is used.

The normal healthy gall bladder is not visual in the roentgenogram. Therefore when it can be recognized definitely it is pathologic. It is enlarged, its wall is thickened, the bile is darker in color (which means increased density) or there are stones in the gall bladder or ducts. When a good X-ray technique is used any of these conditions will cast fairly dense and easily recognized shadows.

To obtain additional evidence of gall bladder pathology such indirect evidence as may be obtained with an opaque meal may serve to corroborate the direct findings, or in the absence of the latter may give information of a nature to aid greatly in the diagnosis. In some cases the gall bladder may cause pressure upon the duodenum or the antrum of the stomach, displace the jejunum and the colon, or cause deformity of the first portion of the duodenum by diaphragms, hepatization of the stomach due to pericholecystitis with adhesions or deformities of the hepatic flexure. The emptying time of the stomach following a barium meal is usually much shortened when the gall bladder is diseased.

The technique of the X-ray examination of the gall bladder is as follows:

The patient is instructed to take a dr of compound licorice powder each night for two or three nights previously, and to eat no evening meal the day before and no breakfast on the morning of the examination. From two to four exposures of the gall bladder region (including all the area between the crest of the ilium and the tenth rib) are first made; the penetration, time, etc. being varied but care being taken that the dark-room assistant develops all the films for the same length of time so that they will be of different densities. A barium meal is then given in the fluoroscopic room and careful search made for indirect signs. Other gall bladder exposures are made to discover any diaphragms

pressure involving the stomach and duodenum, or other findings which might have been missed in the first series of films. The hepatic flexure of the colon is studied at eighteen to twenty-four hours.

During the past twenty-eight months a complete roentgenological gall-bladder study of 715 patients was made. Roentgen-ray evidence of gall-bladder pathology with or without stones was reported in 5 cases, approximately 35 per cent. The operative findings in 4 of these cases were also studied. The surgeons reported that the gall bladder was normal to palpation in seven of the cases in which positive roentgenological findings had been reported and pathological in six of those in which negative roentgenological findings were reported. In other words, the roentgen ray conclusions were confirmed in all but fourteen cases, or in approximately 93.5 per cent.

The author's experience leads him to the conclusion that careful roentgenological investigation of the gall bladder region should be made in every case referred for abdominal study.

ADOLPH HARTMAN, M.D.

Lain, E. S. Treatment of Cancer of the Lip by Radiation. *Arch Dermat & Syph* 9 4, 434

This is a brief presentation of the results in 248 consecutive cases of cancer of the lip treated by the author with the roentgen ray and radium. In his private practice between 1909 and 1917. The diagnosis was made largely from a clinical rather than a biopsy examination. Most of the cases were of the prickle- or squamous cell variety.

Since about 1915 these cases have been classified into three groups, according to the location of the lesion upon the lip and the degree of its development which largely indicate the prognosis.

Group 1 comprises those lesions which are situated wholly on the cutaneous border of the lip, are not deeply indurated, and are without palpable or other evidence of metastasis in adjacent glands.

Group 2 consists of those in which the lesion most commonly overlaps the mucosa of the lip and is deeply indurated, and the adjacent submental or submaxillary glands are palpable. This group includes also a few cases of recurrence following previous treatment by the application of caustics or surgery. In Group 3 are cases of obvious metastasis in more than immediately adjacent glands. Approximately this entire group is composed of patients who have tried repeatedly other methods of treatment and whose condition is hopeless so far as a final cure is concerned.

In the treatment no invariable routine was followed except as regards certain proved or unquestioned procedures. One of the latter was the radiation of the submental and submaxillary glands with hard or gamma ray in all cases of cancer of the lower lip. The treatment of metastasizing areas was given in most cases by the roentgen ray with milliamperage of from 5 to 50, spark gap of from 6 to 10 in an anode distance of from 8 to 15 and



filters of from 1 to 4 mm of aluminum. Later from .25 to 0.5 mm of copper was added and the radiation was given for from twenty minutes to one hour at each position. During the past two or three years, the glands have been given a dosage of 200 k.v. 5 ma. at a focal distance of from 6 to 8 in. for twenty-five to forty-five minutes, this treatment being repeated as indicated in six weeks.

The author is fully convinced that two or three properly timed and filtered doses of radium at intervals of a few days are more destructive to any type of cancer cell than the total given at a single exposure. The so-called fractional dosage, with either the roentgen ray or radium, is much to be feared, although it is more successful if a nearly lethal instead of a stimulating dose for the pathologic cell is given each time. The destruction of certain class of early basal cell cancers situated externally on the lips or elsewhere may be more rapidly accomplished, and without an objectionable scar by the use of the combined hard beta and gamma rays than with the gamma ray alone.

The technique used in a certain type of case of Group 1 in which there was proliferating keratotic elevation with only mild degree of infiltration, consisted, first in the application of 0- or 30-mgm plaque screened with .3 mm of aluminum for period of two or three hours. After ten or fifteen days this caused reaction which as followed after twenty or thirty days by degeneration and perhaps an exfoliation of all superficial pathologic cells. Before this reaction began or immediately after the first application, a plaque of from 1 to 30 mgm was applied with screening of .3 mm of brass for eight to twelve hours. This filter permitted only about 5 per cent of the hardest beta rays to pass and yet utilized all the gamma rays for deeper effects. The deeper effects, which were produced in from four to six weeks, consisted in a perceptible softening and possibly complete disintegration of the deep cellular structures of cancerous nature.

In the treatment of Group 2, lesions of deeper and more extensive development, or of the squamous or the prickle-cell variety, 10- or 30-mgm plaque of radium screened with .3 mm of brass was first applied over the lesion for from ten to fourteen hours and then reinforced within a few days by pack of from .00 to 100 mgm of radium screened with .3 mm of brass and placed on pad of gauze from 1 to 3 cm in thickness. This pack as placed over regions of possible metastasis for total of from fifteen to twenty hours and the application as repeated within a few days until a total of from 100 to 2,000 mgm-hrs had been given.

In certain class of indurated or deeply nodular cancers of the lips the application of the plaques was followed by the insertion of as many radium needles from 1 to 4 cm apart as were necessary thoroughly to radiate the entire area of the cancerous growth. These are left for from three to five hours.

In the treated cases such belonged to Group 1 the percentage of cures was 98+. In Group 2

is noted that since the use of the more recent and much improved methods of radiation with heavy kilo voltage and radium packs or when radium needles are inserted into the glandular metastasis the percentage of cures falls not far short of that in Group 1.

The author draws the following conclusions:  
The cellular morphology of cancer of the lip has less importance in the prognosis than the location or degree of the development or the age of the patient. A prickle- or squamous cell cancer in the early stage of its growth will undergo degenerative changes under radium or roentgen ray radiation just as does the basal cell variety differing only in the amount of radiation necessary and the technique of its application. Statistics verified by both clinical and laboratory findings now justify the conclusion that cancer of the lip is perhaps more amenable to treatment by the roentgen ray or radium than by surgery and in most cases radiotherapy is to be preferred.  
ANDREW HARTOV, M.D.

Prishler, O. E. Cancer of the Lip Treated by Electrocoagulation and Radiation. *Arch. Derm. Syph.* 6: 71-78.

In the latest stages of cancer of the lip neither radiation nor electrocoagulation nor any other form of treatment can be expected to cure. For successful results cancer of the lip must be treated early and thoroughly. Thorough treatment means radiation whatever other method is used in addition. As prophylactic measure every point of irritation affecting the lip should be removed. If thorough treatment is given in the early stage, practically all cases will be cured.

The author has treated 13 cases of cancer of the lip in his own clinic. Eighty of them were primary, twenty recurrent and five postoperative. Of the eighty patients, six primary lip cancer, seven recovered and six remained well from several months to eighteen years. Three died of continuation of the disease, and two have had recurrences. The result in the other cases is unknown. Of the twenty patients with recurrent cancer of the lip, only eight recovered. The five patients given postoperative treatment have remained well, though none was subjected to block dissection.

Much depends on the promptness and thoroughness with which these patients are treated, but in part at least the outcome depends also on the nature of the cancer and the degree of its malignancy. The effect of radiation must be prompt or failure is apt to result. Thorough radiation by means of the roentgen rays from the very beginning and by radium when it can be combined to advantage is most important.

Selection of cases is necessary to determine whether radiation should be combined with electrocoagulation. If the lesion is small and its removal will not cause too serious defect in the lip, destruction by electrocoagulation will be followed by

more prompt and more satisfactory results than radium alone. By such destruction the diseased tissue is macroscopically removed in much the same manner as the surgeon removes it with the knife, but the blood vessels and lymph channels are not opened. If the cancer involves the entire lip or even half of the lip, such preliminary destruction by electrocoagulation is impractical unless some means of closing the mouth by a subsequent plastic operation can be foreseen. Generally speaking, thorough trial should be made first with applications of radium in advanced primary cases. If radium is skillfully applied, good results may be expected. In some cases, however, only marked temporary improvement may occur, stage being then reached in which the disease is at a standstill or begins to progress in spite of radium. At this stage, complete and thorough local destruction or complete surgical excision is probably the only procedure possible.

Electrocoagulation consists in the coagulation of the diseased areas by means of the high frequency current. This current is not selective in its action, and will destroy the tissues radiating outward from the point of application. It cannot be used in areas in which essential structures, such as important blood vessels or nerves, are located in the line of destruction. Beyond the actual coagulation there will be zones which will be superheated sufficiently to destroy any cancer cells, but not sufficiently to destroy the healthy tissue. The defect after the patient is well does not nearly equal the amount of diseased tissue removed. There is, apparently, a regeneration of a part of the tissue removed. The heat is generated in the tissues. It is the penetrative value of this form of heat that makes it more desirable than that obtained by the thermocautery which destroys only by transmitted heat and therefore is essentially more superficial in its effect.

Radium is indicated in all cancers of the lip whatever other treatment is used, and sufficient radium must be employed initially to destroy the cancer cells. If patient is to be operated on surgically, preliminary radium with full erythema dose should be given over the lip and chin and in the submental and submaxillary spaces and similar radium should be given after the operation and two and three weeks after the preliminary treatment. The patient should then be kept under observation for several years, and more radium should be applied if there is the slightest sign of recurrence. The same type of radium should be added to electrocoagulation and can be applied most practically by means of the roentgen ray.

For this purpose the author uses a 9 in. spark gap with 5 ma. of current through 6 mm. of aluminum filter at distance of 30 cm. for twenty five minutes. The time must be governed by the radiation value of the instrument used.

If sufficient radium and sufficient skill in its use are available, most, and perhaps all, local cancers of the lip can be cured. This treatment will require

more time, more skill, and more patience than the combination of electrocoagulation and radium, but there will be more preservation of tissue and a better cosmetic result than can be obtained by any combination with surgery or electrocoagulation. If radium is to be used for the local destruction of the cancer with preservation of the tissue, the local tissues must be kept saturated to the limit of toleration of the normal structures until the cancer entirely disappears. The submaxillary regions can be treated by surface applications properly screened.

If metastatic nodules are palpable, they should have preliminary radium as described and should then be dissected out or treated by the insertion of radium needles sufficient to destroy the disease. Radium needles of .5 mgm. each may be inserted 1 cm. apart throughout the diseased area and left in place for eight hours.

The author draws the following conclusions:

Any fissure or crust on the lip which persists longer than a month should suggest malignancy.

Local destruction by electrocoagulation followed by thorough radium should effect a cure in practically all cases if it is done early.

3. Thorough radium by radium or the roentgen rays should be given over the lymphatics draining the diseased area.

4. In cases of recurrent carcinoma the results are much less satisfactory.

5. Metastatic lymph nodes should be treated by surface radium and then by radium implantation or excision.

ABRAHAM HARTMAN, M.D.

T. Ossig, L. Carcinoma of the Tongue and Its Treatment with Radium. *Arch. Dermat. & Syph.* 9:2, 424.

Cancer of the tongue is seen most often between the fourth and sixth decades of life and is much more common in men than in women. It occurs most frequently on the side of the tongue. Pathologically it is practically always of the squamous cell type. Among the etiological factors, syphilis and trauma produced by rough teeth and the use of tobacco are of prime importance. Since it is often preceded by such conditions as leukoplakia and chronic ulcer the prompt and thorough treatment of such lesions may prevent its occurrence. Every effort should be made to differentiate it from syphilis and tuberculosis. At times this differentiation is difficult.

Operation, which has been the accepted form of treatment, is very in failing, has carried a high mortality even in the most skilled hands, and has given few cures. During the past few years a number of physicians have treated cancer of the tongue by electrocoagulation, usually in conjunction with radiotherapy. In capable hands, these methods have frequently given satisfactory results.

The treatment of carcinoma of the tongue with radium has many advantages. In the first place, there is no primary mortality. Secondary death, due to hemorrhage or infection, is far less common after radium treatment than after surgery. A

palliative result can be obtained in the majority of the cases with radium treatment. On the other hand, even if the patient survives operative treatment speech is greatly impeded, the patient is able to eat only with great difficulty and there is frequently increased rapidity of growth of the neoplasm. It is still impossible to estimate the percentage of cures obtained by radium because the method has not been in use long enough and because the majority of the cases seen are those which the surgeon considers hopeless. The great disadvantage of radium in these cases is the painful reaction. It is impossible to estimate the severity of this in advance. In some cases the period of reaction was short and the healing of the ulcer and softening of the lesion were prompt. In others, the amount of suffering was out of all proportion to the extent of the lesion and the clinical appearance of the reaction. No satisfactory method of combating the reaction has been found.

The ideal method of treating these cases consists in inserting tiny unencased tubes of radium emanation as described and first done by Jarrold and Quirk of the Memorial Hospital of New York City. It is best to give the entire dose at one sitting and to seed the entire radiated area with the emanation tubes (each of which contains about 3 mc) inserting from five to ten or more according to the size of the lesion. This gives an even, intense radiation throughout the tumor mass. In addition, crossfire from the surface by means of a radium plaque or the application of a number of tubes is sometimes used. The reaction occurs a little earlier following the use of buried bare tubes of emanation than following the surface application of radium. It begins as a rule in about seven days, is usually at its height in from two to three weeks, and then gradually diminishes. This reaction consists of an increase in the swelling with burning pain and often an increase in the size of the lesion due to ulceration following the separation of the slough. A reaction on portions of the mouth adjacent to the area treated is constant and often painful and unpleasant feature. In favorable cases, after the height of the reaction has been reached, the lesion softens rapidly and then heals slowly.

Probably the method next best to the burying of bare tubes of emanation is the insertion into the tumor mass of steel needles containing radium element. The number of these and the time of exposure depend on the strength of the needles and the size of the lesion. This method probably causes more tissue destruction than the bare tube method and does not give such an intense local radiation. The surface application of tubes or plaques alone is certainly the least satisfactory form of treatment and can be expected to give no more than palliative results except in the most superficial cases.

At the same time that the tongue lesion is treated the cervical glands should be given a massive dose of roentgen ray covering three areas, the front and the two sides. If there are palpable glands that

are clinically malignant, these should be removed about 10 weeks after radiation if they are operable. If they do not appear to be operable, bare tubes may be buried in them at the time of a partial operation or inserted through the skin under local anesthesia. If no glands are palpable, the patient should receive 1 or three courses of roentgen ray treatment and be kept under close observation as long as possible. If glands develop under treatment, they should be operated on 1 once and the roentgen ray treatment continued after operation. During operation, bare tubes may be buried in any suspicious area. The technique of the roentgen ray treatment has been constantly changed. During the last year the distance and the screening have been considerably increased, with apparently better results. The application of a radium pack to the neck in these cases has been given up as uneconomical and no more effective than the roentgen ray.

During the last two and half years fourteen patients with carcinoma of the tongue have been treated by the author. Four were clinically free of the disease 10 of them 1 year, one, one and half years and one six months after treatment. Five showed cervical metastases at the time treatment was instituted, and five of the others developed an involvement of the glands during treatment. None of these patients survived. It is reasonable to expect that with improved technique it will be possible to cure 5 per cent of untreated cases of carcinoma of the tongue by radiation.

ABRAHAM HARTMAN, M.D.

#### Freezer O. T. Carcinoma of the Larynx Treated Locally with Radium Emanations. A Clinical Report. J. Clin. Med. 9, 1922, 602.

By means of an apparatus which he described in detail the author has been able to apply radium treatment to a number of cases of carcinoma of the larynx most satisfactorily. After the induction of local anesthesia of the oropharynx, the base of the tongue and the larynx, the specially devised holder containing four radium emanation tubes is placed as close to the growth as possible. The dose found best in the verruga case is from 300 to 500 mc for one hour repeated every three to seven days until from 600 to 750 mc have been used. The reaction is usually moderate and the cancer disappears rapidly. Early and soft nodular carcinomas may disappear after only one treatment of 50 mc for one hour. Irradiation up to the full dose should be given, however even though it causes sharp reaction.

Thirty-two cancers of the larynx were treated by intralaryngeal irradiation. Three of the patients were moribund when admitted and soon died. In twenty-two others the cancer was in an advanced stage. In only seven was it in an early stage. Four of the cancers were very resistant to irradiation. Ten of these, early hopeful progress was followed by no further response to the ray. A third there was an excessively prolonged reaction which had not

ceased when the patient died of pneumonia. In the fourth case, the cancer progressed after temporary improvement and then could be checked only temporarily.

In eleven patients, speedy complete disappearance of the cancer and its symptoms was followed by return of the growth, the average time between the last irradiation and the return being four and one-half months. In seven of these patients the advanced state of the cancers favored a relapse, all being large tumors deeply invading the tissues. In four of these cases of recurrence the cancer was again removed by renewed irradiation and there was no further relapse. The fifth was being successfully treated when the patient died of heart failure. These four cases, with ten in which the cancer disappeared without return after the first irradiation, make a total of fourteen in which the cancer was completely eliminated and the patient became clinically well. Deducting the three cases of moribund patients leaves fourteen of twenty-nine, or about 50 per cent, in which there was clinical recovery. This is a good percentage considering that in twenty-five of the thirty-two patients the cancer was in an advanced stage and thirteen of the patients had extrinsic cancers, that is, cancers which were inoperable by laryngectomy.

The author's experience has led him to the conclusion that external irradiation is much too feeble to be efficacious. By virtue of its select action, radium emanation applied in sufficient strength within the larynx offers far greater chance of cure. The amount of reaction after irradiation varies, but only in the exceptional case is it very intense and prolonged. Renewed symptoms after apparent cure invariably mean recurrence. Recurrences usually react to irradiation in much the same manner as the cancer reacted to the primary irradiation.

The prognosis is best in cases of early superficial cancers on the cords or in the arytenoid region which do not impair cord motion. It is less favorable when the cord is fixed and when deep edema of the arytenoid and ventricular band region reveals entrance of the cancer into the laryngeal muscles or perichondrium.

Scirrhous cancer with retracting distortion of the interior of the larynx but no edema and with little viable neoplasia was found favorable for irradiation, as were also soft cancers of rapid growth, little penetration, and large tumor formation. Squamous cell carcinomata with whitish, fuzzy surface may be resistant, especially when they cause pain and deep swelling. A favorable symptom is intense, prolonged reaction with edema and false membrane formation. This shows either weak resistance of the tissues to radium or multiple deep cancer foci. Early glandular carcinomata usually yield readily to external irradiation from a distance with from 500 to 1,000 mc for seventeen hours, as employed by Sampson and Fletcher. The outlook is unfavorable when all of one side of the neck, including the infrahyoid triangles, is filled with gland cancers and when

paralysis of the recurrent laryngeal and hypoglossal nerves is revealed by deep invasion of the neck.

The treatment of cancer of the larynx by irradiation by the method advocated contrasts very favorably with operation. By its selective destruction it causes the cancer to vanish leaving the normal tissues intact. It often restores speech and the normal structure of the larynx. The penetration of the rays clears away not only the cancer but also the hidden cancer foci in its surroundings which the knife cannot reach. It offers the patient about a 50 per cent chance of being freed of the cancer either once or by the irradiation of recurrences. Therefore emanation should be the first and laryngectomy the last resort.

ADOLPH HARTUNG, M.D.

Barringer B. S. Technique and Statistics in the Treatment of Carcinoma of the Bladder by Radium. *Am J Roentgenol* 9 12, 757

In the treatment of carcinoma of the bladder by radium the application is made intravesically to growths confined to and around the bladder neck, small papillomata, pedunculated papillary carcinoma (if the pedicle can be reached) and infiltrating sessile growths not more than 3 cm. diameter. Growths other than these are treated by the suprapubic method. This group includes extensive infiltration of the bladder wall, large and multiple tumors, and doubtful cases.

The technique employed in the intra-vesical method is as follows:

By means of a flexible spring holder used through the sheath of the Brown-Burger operative cystoscope, one or more of screened radium are held against the tumor for half an hour while the tumor is being observed through the cystoscope. This is repeated every two weeks or less often if the tumor is disappearing satisfactorily. If the neoplasm appears solid or hard or has an indurated base it may be treated by thrusting into its base or the indurated part a radium needle screened simply by the steel of the needle. If the tumor is more extensive it is papillary in character if the pathologic examination shows it to be a pure papilloma, and especially if it is around the bladder neck, the treatment is often begun by placing in the bladder tubes of screened radium (5 mm. nil or 3 mm. rubber). These tubes are inserted through the sheath of a straight cystoscope, tied with string, left in place for varying periods of hours, and then pulled out of the urethra by the attached string. As a rule the thoracic tubes of 50 mc. for five or six hours. The value of such radiation is, first to determine how the tumor reacts to radium, second, to stop the bleeding temporarily so that cystoscopy will be possible, third, to destroy that portion of the tumor around the internal urethral orifice.

The suprapubic application of radium in external carcinoma is made under gas and oxygen anesthesia. The bladder is exposed and opened. Sponging of the exposed tumor is restricted; the minimum in order

to prevent bleeding and the spreading of tumor cells. Protruding portions of the tumor are snared off with a simple wire snare. If the tumor is flat and not papillary in type, once it is removed. The papillary part is snared off to facilitate exposure and treatment of the base. The indurated parts of the tumor are bare radium tubes (7 mc) is implanted by means of a needle in each square centimeter. These bare tubes are put in to the extreme edge of the tumor. The bladder is filled with 60 per cent alcohol (after the method of Beer (three minutes) order to kill any stray tumor cells and to prevent implantation. It is then closed with plain catgut and usually is drained by a small rubber tube.

To determine the value of radium removal of bladder carcinoma comparison is made between the results obtained with radium and those given by operative treatment. Three groups of cases are considered, viz. operable cases, inoperable cases, and those in which operation is performed as an adjunct to radium treatment. In the inoperable group are placed:

Multiple carcinomata or large carcinomata with a base more than 4 cm in diameter.

Carcinomata which have affected the trigone and posterior urethra.

3. Carcinomata which have been operated upon previously and have recurred.

4. Carcinomata in persons whose age or condition contra-indicates operative removal.

Ten operable and twenty inoperable cases treated with radium are cited in detail as regards the gross and microscopic pathology, the complications, the method of applying the radium, and the results. In eight of ten operative cases (80 per cent) the carcinoma was removed from the bladder. The two patients who died lived 1 1/2 years and three months respectively after they were first seen. In twenty inoperable cases of bladder carcinoma the tumor was removed from the bladder. In three cases the carcinoma recurred after removal. In one of these three the recurrence was beyond the bladder; the other two are being treated. One patient died from radium sloughing of the bladder.

Brief consideration is given to tumors in the third group. Thirty-five bladder carcinomata were treated in this way. In only two of these cases might the tumor have been regarded as operable. In two cases it was so large that the bladder was not opened, but radium was implanted in it. In twelve of these thirty-five cases the carcinoma had been removed from the bladder. Nineteen of these thirty-five patients are living. In cases which could not be benefited, it is probable that death was not appreciably hastened. On the contrary in some hopeless cases the tumor's growth was retarded, the spur of life lengthened, and bleeding stopped.

Scholl of the M. J. Clinic reported that of ninety-four patients operated upon for solid carcinoma of the bladder sixty-seven (71 per cent) are dead after an average duration of life of seven and half months, and twenty-seven (28 1/2 per cent) have lived

an average of three years and three months. Twenty per cent of patients operated on for infiltrating carcinoma died during the first month after the operation, while radium removal had no immediate mortality.

The following conclusions are reached:

Radium removal is superior to surgical removal because it can cope with inoperable cases. If radium removal can be effected suprapubically the time of operation is shorter and the kidneys are less disturbed by the operation. Many so-called operable tumors can be removed through the urethra without operation.

ADOLPH HARTUNG, M.D.

Burnett C. F. The Results of Treatment of Carcinoma of the Cervix, with Statistics and Technique. *Am J Roentgenol* 9, 2, 12, 765.

Surgical removal in the very early stage of the condition has a low mortality and morbidity and results in permanent cure in considerable number of cases. In moderate involvement of the parametrium and vaginal walls both the mortality and morbidity are increased and the percentage of cures is decreased. In cases of extensive parametrial or vaginal involvement the mortality is definitely increased, the morbidity greatly increased, and the cures are very few. In cases of fixed parametrial masses and extensive vaginal, bladder, rectal, or vaginal gland involvement there are practically no cures.

Local treatment with radium has no mortality or morbidity in the early cases and a very substantial percentage of permanent cures. In the extensive borderline operable cases the mortality and morbidity are low, the percentage of short cervical cures

very high, and the percentage of long cervical cures much less than in early cases, but much greater than that following operation. In cases of extensive parametrial fixation and those with involvement of contiguous parts of the bladder and rectum or all or nearly all of the vaginal wall immediate relief is given and may persist for months or years. Cervical cures are also very common, but persist for five years is only a small percentage of the cases.

Radiation from the surface of the body (the abdomen, the back, or the perineum) has been employed chiefly as a method supplementing other forms of treatment. In the presence of extensive gland metastases this method sometimes resulted in marked relief from pain as well as some shrinkage of the masses but nothing approaching a cure was ever observed. Few of the claims made regarding the results obtainable by the Erlangen method of treatment (its highly penetrating roentgen rays) could be substantiated. It is difficult to obtain statistics of cures especially in fairly early cases, so that the relative value of this method and radium therapy could be determined.

Of 13 cases observed by the author with Kelly and reported in previous communication only fourteen were operable. Ten of the latter were treated by a combination of radium and operation, and four by radium alone. At the time this article

as written, more than seven years after the treatment, five of those treated with operation and radium and two of those treated with radium alone are still alive.

With regard to the technique the author states that emanation has been employed for a number of years instead of radium element. Applicators are ordered and arranged to fit the requirement of the particular case. When the cancer is limited to the cervix one tube is placed at the internal os, one at the external os and four on the cervix. In such cases total of 3,000 mc-hrs of radiation (200 mc-hrs within the cervix and 800 mc-hrs upon it) is curative single dose. When the parametrium is involved the exposure should be increased 4 or 4.5 gm hrs. For extensions on the vaginal wall about 4 gm hrs of irradiation evenly distributed should be given for each square 5 cm of surface in addition to the cervical treatment indicated. Deep parametrial or paravaginal nodules should be treated by the implantation of emanation points. In cases of high abdominal masses this implantation should be effected through an abdominal incision. When the needles are used the treatment is given

under gas anesthesia. When needles are not used the patient is treated in the knee chest posture without the induction of anesthesia.

After the treatment examinations are made at intervals of two weeks and no further treatment is given for at least ten weeks unless there is obvious trouble outside of the areas treated. Retreatment in the heavily radiated areas if necessary must be much lighter. As a preliminary to operation, about two thirds of the dosage mentioned is given.

The primary results of the treatment discussed was very good. A primary clinical cure was obtained almost invariably except in the advanced inoperable cases.

The following conclusions are reached:

The treatment of choice in early operable cases is operative with pre- and postoperative radiation. In late operable cases it is topical radium treatment and perhaps external radiation. In advanced cases topical radium treatment and the implantation of bare points are indicated. The use of radium alone in early operable cases is thoroughly justifiable. Operation alone is also justifiable.

ADOLPH HARRIS, M.D.

# GYNECOLOGY

## UTERUS

Bretschneider: Observations on Myoma and Accident (Uter. Myom und Unfall). *Zentralbl. f. Gyn.* 1922, 27: 75

Sarcoma and carcinoma of the uterus has never been recognized as the results of accident because in such cases the essential conditions advanced by Tolem in his *Handbook of Diseases Due to Accident* (viz. single and considerable effect of force at the site of the subsequent tumor and the formation of the tumor at a definite time determined on the basis of experience) are not fulfilled. In a lawsuit in which the author, as requested to give an expert opinion he denied the relationship between myoma of the uterus and an accident, basing his statement on Ribbert's theory of the origin of tumors. He believes that just as in cases of sarcoma and carcinoma of the uterus, so also in cases of myoma, an accident as a cause must be denied on principle.

On the other hand, number of cases—the author has observed such a case himself—have been unquestionably demonstrated in which an accident acted unfavorably upon a myoma already present, causing hemorrhage, necrosis, gangrene peritonitis, or in erosion of the uterus. Therefore the question whether powerful forces injure a myoma, or decrease the woman's earning capacity must be answered affirmatively but the question as to whether an existing myoma may undergo sarcomatous degeneration as the result of such trauma must be decided on the basis of the findings. *MISNER (2)*

Burney V. Remarks on the Scope and Technique of Myomectomy. *Lancet* 1922, 2: 1015

Myomectomy fulfills higher surgical ideal than hysteromyomectomy in that it preserves the potentiality of reproduction. The very small fibroids as well as the large must be removed. Fibroids with broad bases placed posteriorly at or near the cervix often require difficult surgical procedures.

Malignant, necrotic, and suppurative degenerations are contra-indications to myomectomy.

Pedunculated and superficial tumors can be removed without disturbing an associated pregnancy, but in cases of deep fibroids the pregnancy must be interrupted at the time of operation.

A single anterior incision is best. Posteriorly placed fibroids are removed through the uterine cavity or through the wall unless they are pedunculated or superficial. Anterior incisions are more favorable because they are more accessible if post-operative bleeding or infection occurs and less liable to intestinal adhesions. Silk sutures are employed unless the uterine cavity is entered when the uterus is opened, catgut is used.

All redundant tissues is removed in order not to leave the organ too large. When the operation is finished if hemorrhage is troublesome all uterine arteries may be temporarily clamped during the operation. *R. E. CANNON, M.D.*

De Ott D. The Evaluation of Hysteromyomectomy (L'Evolution de l'hystéromyomectomie). *Gaz. d'obst.* 1922, 71, 200

In 1894 De Ott of Petrograd reported the results of twenty cases of supravaginal resection of the fibromyomatous uterus with extraperitoneal fixation of the stump the mortality was 4.5 per cent. Schroeder later simplified the treatment of the stump. In 90 De Ott, as obliged by the exigencies of case to perform a radical vaginal operation. This resulted satisfactorily. With the perfecting of the operative technique and asepsis series of ninety-nine cases were operated upon in this manner. There were no deaths. In a second series of 37 cases the mortality was only 0.27 per cent. When the abdominal route was used the mortality was 7.27 per cent and in total of 154 operations by both methods (high and low) performed during the period from 1895 to 1911 and a total of 334 operations performed up to 1911 the mortality was 3 per cent.

In Petrograd the mortality of abdominal operations for fibroma has fallen from more than 3 per cent in 1885 to about 7 per cent in 1910, and the mortality for operations by the vaginal route from about 3 per cent in 1895 to zero in 1910. These figures show that the operation of hysteromyomectomy is now satisfactory. Success is due especially to the perfection of asepsis. *W. A. BRIDGES*

Frank, R. T. Cancer in the Cervical Stump Metastases in the Vermiform Appendix. *Surg. Gynec. & Obst.*, 92, 222-234

The case reported was that of a woman 47 years old who had had supra vaginal hysterectomy for fibroids and five months later was treated with radium for carcinoma of the cervical stump.

One year after the hysterectomy the patient entered the hospital and shortly afterward developed symptoms of obstruction of the bowels. Surgical measures were employed but death occurred one hour after the operation.

Autopsy revealed cancer of the cervix which had not invaded the peritoneal cavity but involved the vesicovaginal septum and the parametrium. Numerous retroperitoneal lymph glands contained metastases.

In the tip of the now adherent vermiform appendix was small mass which proved to be identical in morphology with the original tumor.

Because of the danger of the development of cancer in the cervix following supravaginal hysterectomy some surgeons believe that a total hysterectomy should be done in all cases, but because of its higher mortality and the fact that it does not always prevent the recurrence of cancer the author regards it routine use as unwise.

A search of the literature failed to reveal a case of metastatic carcinoma of the appendix in which continuity or contiguity were not responsible for the metastases.

I. E. BROWNE, M.D.

#### ADENAL AND PERI-UTERINE CONDITIONS

Bell, W. B. Endometriosis and Endometriomyoma of the Ovary. *J. Obst. & Gynec. Brit. Emp.* 92, 333, 443.

The author reports on his investigation of the so-called chocolate cysts of the ovary and credits Sampson with the recognition of this very interesting pathologic and clinical condition.

From Bell's study of the subject it seems probable that all unstriated muscle fibers in relation to endometrial tissue in the ovary are merely those which are normal to the ovary but have undergone hyperplasia.

Bell reports a specimen removed by supravaginal parhysterectomy in which the uterus and tubes appeared normal but both ovaries showed endometrial tissue on section. Sections were made from the ovarian ligaments on either side at the junction of the ligament with the uterus but on traces of endometrial tissue was found. Consequently the conclusion is drawn that the lesions present were an independent ovarian endometrioma and an endometriomyoma respectively. Such cases are not uncommon and it is probable that before long many will be reported.

The article is illustrated with six figures showing the gross specimens and photomicrographs of the sections from the ovaries.

C. H. DAVIS, M.D.

De Bruyne, F. The Clinical Results of Ovarian Grafting (Contribution à l'étude de la greffe ovarienne de l'ovaire). *Gynec. & Obstet.* 9, 2, 17, 36.

The author first discusses nine cases found in the literature in which an ovarian graft was extirpated and examined histologically.

Recently he has had a similar experience in the case of a woman of 5 years who had had a hysterectomy for adenial tumor. The graft was transplanted subcutaneously into the abdominal wall and extirpated one hundred and seventy-three days later. Histologic examination showed that it had given rise to a proliferation of luteal tissue which formed the all of cysts too irregular in structure to be identified with normal corpus luteum or a true corpus luteum. In the author's opinion the luteal cells have longer existence in the transplanted ovary than in the normal ovary. In the case reported the transplant had taken up the function of the ovary in part at least.

Earlier research demonstrated that the results of ovarian grafts are more transitory after subcutaneous transplantation than after transplantation into the abdomen or pelvis. The author's clinical experience confirms this finding.

De Bruyne has had sixty-eight cases of subtotal hysterectomy with bilateral salpingo-oophorectomy. In fifty-eight of these fragmental ovarian grafts were implanted subcutaneously on both sides. The majority of the grafts included parts of the corpus luteum, the cortical layer and the medullary zone.

Up to a certain point the subcutaneous transplantation of ovarian tissue, especially if the graft hypertrophies and becomes congested (which occurs in about 40 per cent of the cases) will prevent the disturbances of a premature menopause in 75 per cent of the hypertrophy cases.

A cystic formation results in 70 per cent of the cases in which the cortical layer of the ovary is grafted and in only 30 per cent of the cases in which the corpus luteum is grafted.

Cystic formations are more frequent when the ovary from which the transplanted fragment is taken shows normal histology.

In women more than 40 years old the grafts never become hypertrophied.

Although in the author's case he did not find any clear signs of follicular maturation, the clinical findings indicated that the transplanted follicles played the principal rôle in the phenomena observed.

R. A. BARNARD

Dorland, W. A. N. A Clinical and Embryological Report of an Extremely Early Tubal Pregnancy. Together with a Study of Decidual Reaction, Extra-Uterine and Ectopic. *Am. J. Obst. & Gynec.* 9, 37.

The subject of ectopic decidual reaction is of too recent development and the clinical material is still too scanty to warrant any very definite conclusions. Outerbridge covered the matter satisfactorily when he stated that ectopic decidual reaction, on the whole, is extremely difficult in occurrence, circumstances which may be ascribed to variations in the intensity of action of the ovarian hormone, different degrees of responsiveness on the part of the uterine connective tissue cells or the presence or absence of suitable local stimuli.

According to Tausig, the superficial location of the ectopic patches seems to indicate that the end products of the normal decidual reaction do not reach these points through the blood or lymph channels, but pass directly through the lumina of the tubes and out through the fimbriated extremities, causing decidual reaction in the ovarian and pelvic peritoneum through irritation. This theory could seem to offer a satisfactory explanation of the comparatively great frequency of the patches in the peritoneum of the Douglas cul de sac, the posterior surface of the uterus, and the rectal walls areas toward which the irritating material would naturally drain.

E. L. CORNWELL, M.D.



## EXTERNAL GENITALIA

Smith, R. R. Prolapse of the Female Urethra and Eversion of the External Urethral Orifice. *Am. J. Obst. & Gynec.* 9 iv 395

Operations for the rebel of prolapse of the female urethra will vary somewhat according to the findings and whether or not there are other conditions to be dealt with at the same time. A simple eversion may be corrected best by removing the protruding mucosa and narrowing the meatus by triangular or more or less square denudation just below the orifice and including part of its circumference. This operation is apt to be bloody and considerable care is necessary to make the denudation of proper form and sufficient extent. In closing the wound the meatus should be narrowed to its normal proportions. Smith is placing the sutures deeper than formerly in order to insure approximation for longer period and prevent separation of the edges and granulation

wound. When considerable mucosa is removed and circular incision of the urethra is necessary, the stitches reuniting the mucosa to the edges of the orifice should be rather deep, catching up fair amount of mucosa, and should not be tied too tightly. The edges are apt to separate, if catheterization is long continued.

Prolapse of the vaginal wall and urethra is corrected best by removing the redundant mucosa by triangular incision with its base across the vagina and its apex toward the meatus. The denudation should include all of the redundant mucosa or more. By bringing the edges together the operator may judge the amount which must be removed. The incision is closed with deep sutures which catch up first the edges of the incision, avoiding the urethra, and draw the urethra and external orifice back up under the pubes where it belongs. On the whole the results are good, but in some cases there may be partial recurrence of the prolapse. E. L. CORDELL, M.D.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

Handerson, L. Ileus During Pregnancy (Ileus der Schwangerschaft) *Zentralbl f Gynaek* 9 214, 1937

Intestinal obstruction is a dangerous, but fortunately a rather infrequent complication of pregnancy and the puerperium. Usually the cause is a condition such as invagination or volvulus. Instances in which the pregnant, non incarcerated uterus alone is the cause are very rare.

Handerson reports the case of a 4 year-old para in the ninth month of pregnancy who had had constipation for twenty years which became more pronounced during each pregnancy. Three days before admission to the hospital she suffered an attack of severe abdominal pain, vomiting, and eructation followed by complete retention of feces and urine. At the time of admission the abdomen was markedly distended and distinct peristaltic movements were visible below the umbilicus. Dullness was present over a breadth about the symphysis. The uterus itself was not palpable and the heart sounds were inaudible. Ecchymoses were unobservable.

Operation revealed marked distention of the small and large intestines. The obstruction was caused by the pregnant uterus which clamped off the colon between the flexure and rectum. A cesarean section, done and non viable child delivered which died after ten minutes. The patient recovered.

The author agrees with Fleuchhauer who, in all cases of pressure of the pregnant uterus presupposes a disturbance of motility of the intestine. In Handerson's case the existing intestinal atony was markedly increased by a dietetic error which rendered the distended, weakened gut unable longer to overcome the pressure of the uterus.

If ecchymoses are not successful the abdomen should be opened. Vaginal cesarean section should not be attempted before this is done as otherwise the incarcerated coils of intestine may be injured. After the abdomen has been opened the uterus should be emptied only if it is found to be the immediate cause of the obstruction or closure of the abdominal cavity without emptying of the uterus would be difficult. An operation need be given to the infant a perineal birth shall follow the operation.

In a case of intestinal obstruction occurring during the ninth month of pregnancy which operated upon by Linderken, the obstruction was found to be the sigmoid flexure. The flexure was twisted to an angle of 90 degrees and wound around the uterus about the level of the internal os. Linderken uncoiled the

intestine, resected the long injured coil, and sutured the ends of the gut into the abdominal wound. Death occurred after a few hours. In the development of the volvulus, the length of the flexure and the lesions of the mesosigmoid were contributory factors in addition to the pregnancy.

WOMAN (2)

Solomons, B. The Results of the Treatment of Eclampsia by the Dublin Method *J Obst & Gynec Brit Emp* 9 222, 46

Special points in the treatment are:

1 Starvation. In some cases nothing but water is given for several days. If then there is no improvement, cesarean section is performed.

2 Gastric lavage. This is continued until the ter returns clear. Two ounces of magnesium sulphate solution are then left in the stomach.

3 Bowel lavage. This is given with the patient on her left side and with the tube inserted 8 in into the bowel. Sodium bicarbonate is then put in until the bowels are clear and then the solution is left in the bowel.

4 Morphine. Recital this has been omitted.

5 The rectum of sodium bicarbonate under the breasts.

6 Close observation to prevent drowning or other accidents.

Of the women whose cases are reviewed, 67.5 per cent were primigravidae. When both the mother and child recovered the average number of convulsions was 5.03. When the mother alone recovered it was 9.45 when the child alone recovered it was 0.50 and when neither recovered it was 0.20. The more frequent the convulsions the greater the prognosis.

The incidence of the condition was greatest in July, February, March and September. The average mortality was 20 per cent.

R. L. CRAMER, M.D.

## LABOR AND ITS COMPLICATIONS

Pickett A. N. Immediate Repair of Lacerations Versus Delay. *Acad Med J* 9 22, 599

The author believes that repair of lacerations due to labor within thirty-six hours after delivery is better than intermediate repair six to ten days later or late repair months or years later. Against the intermediate method of first are the ill effects of the nervous strain experienced by the patient when it is necessary for her to submit to another operation so soon, the temporary interference with nursing when the baby requires it most, and the loss of time to the mother, the attendants and the hospital.

A. L. CRAMER, M.D.

Davis, E. P. The Uterus After Cesarean Section.  
*Am J Obst & Gynec* 9 1 335

An important problem associated with cesarean section is whether the operation should be terminated by sterilization or whether the patient has a fair prospect, if her pelvis is sufficiently large of being successful in spontaneous labor in subsequent pregnancies. In addition to this problem, birth control presents itself in another phase. The obstetrician is often called upon to treat multiparae who are near the final limit of normal child bearing. Many of them are women in straightened circumstances who have as many children as they can properly rear. Many have reached the stage of physical decline after which pregnancy becomes progressively more dangerous. Under these conditions sterilization following cesarean delivery might be justifiable. The condition of the uterus in such cases is an important factor in deciding these questions. When sterilization is not effected and the patient elects possible future pregnancy the method of entering the uterus is of paramount importance.

An opportunity to examine the classical cesarean section scar in the uterus was afforded the author by several cases in which hysterectomy was performed after second delivery. All of these women were operated upon by the same method, viz turning out of the uterus from the abdominal cavity in caseon through the suprapubic segment, emptying of the uterus and, in suspected cases, packing of the cavity. The terine muscle as closed with buried silk sutures, and the peritoneal covering of the uterus with catgut. In none of these cases had septic infection developed after the first operation. In those which were allowed to remain in the hospital sufficiently long, very fair degree of convalescence had been obtained. The patients were white women of the laboring class who cared for their children and did their own housework.

In one case the terine muscle ruptured but the scar remained firm and was stronger than the uterine muscle. In the second case the uterus had undergone such fatty degeneration that extensive rupture occurred as soon as labor began. This patient was not given an opportunity to recover from her previous section and was denied the benefit of hospital care during the last month of her pregnancy.

All of these multiparae showed the degenerative processes which inevitably occur in multiparae: viz, out proper care during pregnancy and labor, namely fibrous uterus and atrophy of the muscular tissues. In patient who was toxic at the time of the operation fibrosis and atrophy were present and in addition there was occlusion of the blood vessels by emboli and thrombi and marked round cell infiltration at the junction of the placenta and uterus. Multiple embolism in the case of a toxic patient is an unusual but natural illustration of the pathology of toxemia.

The author believes that this class of cases strengthens the arguments for birth control by elective hysterectomy at term. These women had

borne children with difficulty and had done their utmost to rear these children at the expense of their own health. Under such circumstances Davis believes elective hysterectomy is justifiable and that no more practical application of birth control could be suggested.  
E. L. CORVILL, M.D.

### PNEUMPERIUM AND ITS COMPLICATIONS

Lynch, F. W. Retropositions of the Uterus Following Delivery. *Am J Obst & Gynec* 1922, IV 36

Twelve hundred and thirty women who were delivered at term in hospital wards were examined thereafter at intervals for a minimum of four months and maximum of twelve months. There were no known pelvic inflammations in the series of cases. During the period of this investigation 337 women were delivered at term. This study is therefore based on 60.3 per cent of the total number of women delivered at term. The following conclusions are presented:

Retropositions were noted in 4 per cent of 30 women kept under observation for four to twelve months after delivery.

Thirty-two per cent of the 305 women with retroposition came back because of pelvic symptoms. Ten and a half per cent of 75 controls with upright uteri complained of slight symptoms.

3. Nineteen and six tenths per cent of 116 private patients presented uterine retroposition in contrast to 44.8 per cent of 1,044 clinic patients. Therefore, hard work may be an important etiological factor of retroposition.

4. Replacement of the uterus and pessary support gave anatomical correction in 73 per cent of the cases. Symptomatic cure and anatomical correction were obtained by identical procedures in 68 per cent of the 66 cases with symptoms.

5. Subsequent pregnancies occurred in 5 per cent of the women who did not have displacements, in 1 per cent of the women who had been treated for retroposition, and in 5 per cent of the women whose retroposition had not been corrected.

6. A new type of suspension has been found entirely successful. Following 33 operations there were no recurrences. Such made necessary a new round ligament fixation upon the uterine foveae (as Webster, thirty one Coffey, sixteen styepel). There were four recurrences following twenty eight Kelly. Need suspension with shortening of the upper part of the uterosacral ligaments.

7. The importance of early correction of retroposition following labor is clearly evident.

E. L. CORVILL, M.D.

### NEWBORN

Menro, D. and Earle, R. E. The Diagnosis and Treatment of Intracranial Hemorrhage in the Newborn. A Report of Fourteen Treated Cases. *Am J Dis Child* 1922, 22 13

The authors give comprehensive review of the literature on hemorrhage in the newborn and report

fourteen cases they have treated. From their study they come to the following conclusions:

Cases of intracranial hemorrhage in the newborn may be classified etiologically into three groups: (1) the traumatic group, (2) the asphyxia group, (3) the fetal disease group.

The diagnosis of intracranial hemorrhage in the newborn should be based on: (1) the history and physical examination, (2) the measurement of intracranial pressure by spinal manometer, (3) the coagulation and bleeding times.

3. The treatment of intracranial hemorrhage in the newborn depends on: (1) the successful biological classification of the case, (2) the recognition of the intracranial pressure.

4. The treatment of intracranial hemorrhage due to hemorrhagic disease consists of the administration of normal whole blood subcutaneously until the bleeding and coagulation times have returned to normal, followed by measures for relieving the intracranial hypertension.

5. The treatment of traumatic cases consists of the prompt elevation of depressed fractures and the relief of intracranial hypertension by drainage, by lumbar or ventricular puncture as indicated, or typical subtemporal decompression.

6. The treatment of asphyxia cases consists of relieving the intracranial hypertension by lum-

bar or ventricular puncture as indicated, or by the performance of a typical subtemporal decompression.

7. Cerebral localization of pathology in the newborn is rarely possible. Therefore corrective surgical measures are impossible.

8. The pathology, diagnosis and treatment of Little's disease should be studied more extensively from the point of view of intracranial pressure.

C. H. DAVIS, M.D.

## MISCELLANEOUS

Stimson, C. M. The Influence of the Placenta on the Mammary Gland. *Am J Obs & Gynec*  
9 2, 41, 43

It would appear that during pregnancy there is something in the maternal blood which inhibits lactation, and that lactation occurs only when this substance is eliminated. In the case cited lactation did not occur during the presence of attached placental tissue within the uterine cavity and in certain cases of abortion milk does not appear in the breasts while placental tissue remains attached in the uterus. These facts therefore suggest that the placenta is the inhibitor of the mammary gland, holding it in check until its function is necessary.

F. L. CORVILL, M.D.

# GENITO-URINARY SURGERY

## ADRENAL, KIDNEY AND URETER

Rovsing T. The Surgical Treatment of Nephritis and Aseptic Nephrosis. (Sur le traitement chirurgical des néphrites et néphroses aseptiques). *Arch Surg Scand* 9 1 56

In 1901 Rovsing reported five cases of nephritis treated by decapsulation of the kidney or as he termed it nephrolysis. The operation as indicated by pain or hematuria. In Rovsing's opinion the effect of the nephrolysis is due principally to relaxation of the strangulated kidney. He believes the operation is indicated chiefly in cases in which parenchymatous processes cause pain and hemorrhage and obstruct the renal circulation. In 1901 it had not occurred to Rovsing that decapsulation might cure severe nephritis without distention of the capsule and he expressed scepticism when Edebohl proposed it for all types of chronic medial nephritis. Rovsing now believes it is indicated whenever medical treatment has no appreciable results. It has performed it in seventy seven cases (thirty seven those of men and forty those of women). A lumbar incision is made, the capsule is split along the convex border and each half is turned back toward the hilum. The capsule is extirpated only if it is markedly abnormal. The cases treated are classified into four groups.

Group 1. Interstitial nephritis or parenchymatous nephritis with crises of pain and hematuria but without albuminuria between the crises. Thirty six cases of this type were cured by nephrolysis. In Rovsing's opinion these are cases of cric or tubic toxic effects on the tissues.

Group 2. Interstitial nephritis associated with albuminuria, pain and hematuria, and often nodular. There are thirty-two cases of this type eleven of them with advanced renal trophy. Two of the patients died shortly after the operation. One died after temporary improvement, nine were greatly benefited, and nineteen appeared to be entirely cured. Good results are obtained even in some of the cases with advanced renal trophy although the deaths and poorest results were also in this group.

Group 3. Diffuse parenchymatous nephritis (chronic nephrosis). In this group there were eight cases. Nephrolysis resulted in cure in four cases and temporary improvement in four. In the others it had no effect. In the latter the renal affection was unilateral in one nephrectomy as done later and was followed by complete recovery.

Group 4. Glomerulonephritis. In four of the three cases of this type the condition was unilateral. These two cases were cured by nephrolysis but in the third the operation had no effect.

W. A. BRYEN

Dermall, W. E. Malignant Papilloma of the Kidney. *Surg Gynec & Obst* 92 175 493

The case reported in this article is the fifty seventh recorded in the literature. Twice as many males are affected as females and the condition may occur at any age. The etiology is unknown but inflammation and stone have been held responsible. The tumor may be small, isolated nodular growth or single large cauliflower mass filling the renal pelvis and destroying the renal parenchyma. It shows a marked tendency to involve the lower urinary tract secondarily.

The symptoms vary according to the size of the growth. Hematuria is the most common sign. This arises in intensity and usually is intermittent. Pain is more or less constant and radiates down the loins. The symptoms may persist for years. It is possible that some of the cases diagnosed as essential hematuria may be of this type. The condition should be suspected in the presence of argenteo-urogenograms, colic along the ureter, diminished or absent function of the suspected kidney and a palpable mass in the loins. If in addition, cystoscopy reveals a papilloma at the ureteral orifice, if the pyelogram reveals a filling defect in the renal pelvis and if the urine contains unidentified epithelial cells, the diagnosis is practically certain.

The treatment in all cases is extirpation of the affected kidney with as much of the ureter as possible. When there is bladder involvement subsequent fistulization is indicated. L. KROWE, M.D.

## BLADDER, URETHRA, AND PENIS

Figurnoff, A. M. The Pathology and Treatment of Fibromyosarcoma of the Urinary Bladder. (*Pathologie und Therapie des Fibromyosarcoms der Harnblase*). *Arch Chir Arch* 9 31

This detailed study is based on the following case. A man was diagnosed clinically by gynecological and treated surgically by Fedoroff who performed a transperitoneal operation. Seven years previously the patient, a woman of 30 years, had had hematuria for several weeks. Since that time she had been well until six months ago when another attack occurred. Micturition was painful and frequent and emptying of the bladder was impossible unless the patient stood partially upright with the body bent slightly backward. The tumor could be demarcated from firm, slightly movable tumor the size of lemon, which presented small nodules on its surface. The growth thinned the anterior wall of the sigmoid and caused it to project forward.

Cystoscopic examination showed that the normal mucous membrane was pushed forward; the right posterior quadrant by tumor the size of walnut.

The right ureteral opening was higher than normal and gaped open but contracted at the escape of urine. The capacity of the bladder was 320 cc.

At operation it was found that the neoplasm involved almost half of the bladder. Where the tumor projected into the lumen the vesical wall was resected. The rest of the growth was removed by morcellation with the exception of the tumor nodule enclosing the ureter. A drainage tube was then inserted and the bladder sutured around it.

After the operation the patient was kept in the abdominal position for two weeks. A self-retaining catheter was then inserted and the patient changed to the dorsal position. The abdominal fistula was closed at the end of four days. When discharged from the hospital the patient was free from symptoms and the capacity of the bladder 230 cc. Cystoscopic examination two months later showed a linear scar which was stellate below and extended upward into the diverticulum. The right ureteral opening was widened and round, but active contractions could be observed. The left orifice was widened and drawn toward the right as far as the midline.

Histologic examination showed the tumor to be an interstitial fibromyoma of diffuse growth which had undergone mucoid degeneration at the center and was without an endothelial lining.

The author has found forty-two myomatous tumors of the bladder described in the literature since 1871; only three were interstitial fibromyomas. Kesselbach's case is noteworthy in that the fibromyoma grew on the periphery and attained a size equal to that of the uterus at the end of pregnancy and weight of 9 kgm.

V. DE OLIVERA, S. GARCIA (Z)

## GENTTO-URINARY ORGANS

Herbst, R. H. and Thompson, A. Carcinoma of the Prostate. *J. Am. Med. Ass.* 9 June 1934

The authors review the literature on prostatic cancer and their own experience with the condition. They found that at least one in every four tumors of the prostate is malignant and in one third of these cases there is evidence of bone metastases. A rather small number of the patients seek treatment sufficiently early to obtain permanent relief. Those whose cancer does not develop urinary symptoms until late. Early diagnosis is particularly urgent in cancer of the prostate because it is silent disease symptomatically until it is far advanced.

Pain along the sciatic nerve is the one symptom associated with early malignancy which should attract attention to the prostate in men of advanced age. Pain in the pelvic and sacral pain and the back are usually significant of extensive local invasion of osseous tissue but may be caused in some cases by glandular or bone metastases. The significance of increased resistance which is often found in the intermuscular space just above the prostate gland must not be forgotten.

This infiltration produces an elevation of the trigone, termed the subtrigonal plateau when seen on cystoscopic examination. It can be felt more distinctly if a cystoscope is introduced into the bladder and the beak turned downward toward the trigone. Obliteration of the interlobular sulcus is also characteristic rectal finding in malignancy.

From the standpoint of treatment cancer of the prostate is of three pathologic types.

1. A scirrhous type, which usually begins in the posterior lobe in the form of small, flat, or nodular areas. The process develops and spreads behind the urinary tract rather than into it. Therefore urinary symptoms do not develop until late.

2. A combination of Type 1 and benign hypertrophy of the upper portion of the prostate. This is difficult to differentiate from simple hypertrophy; the malignant area often being discovered only at operation.

3. A less common form of tumor in which the entire gland is involved by adenocarcinoma. These tumors are as a rule smooth and symmetrical but harder than the adenoma. Metastases do not occur as frequently as in Types 1 and 2.

The authors have obtained better results in cases of Types 2 and 3 than in those of Type 1 because the early development of urinary symptoms caused the patients to present themselves for treatment before metastases had developed.

Herbst and Thompson applied treatment through the opened bladder because it gave easy access to the tumor especially in the subtrigonal area, and relieved urinary retention.

In addition to facilitating the introduction of radium, a suprapubic cystostomy protects the upper urinary tract and does much to make the patient comfortable during the weeks or months that treatment is carried on.

Some of the best results were obtained in cases in which it was possible to evacuate an adenomatous middle lobe fit to be of radium into the cavity and insert several needles containing radium in the malignant part of the remaining shell. Such radium treatment may be repeated if the bladder is kept open, or subsequent applications may be made by passing out the urethra a staff carrying the introducing long needles through the perineum or both.

Most observers agree on the value of the roentgen ray in conjunction with radium therapy.

LOUIS CROW, M.D.

Cecil, A. B. A New Technique for Performing Perineal Prostatectomy. *J. Am. Urol. Ass.* 9 June 1934

Cecil has been convinced for some time that if Young's operation could be altered so as to rid it of technical difficulties, it would lend itself to more general use. He therefore turned his attention toward the development of a procedure which, while less difficult technically, would absolutely insure the integrity of the muscles of urinary control.

and at the same time would protect the rectum from injury.

The result as the devising of a tractor which can be easily introduced through the entire length of the urethra and, when opened in the bladder is efficient in bringing the prostate into the wound, thus preventing all possibility of injury to the external sphincter muscle and any unnecessary scar formation in the region of this muscle.

The uncertainty in dividing the recto-urethra muscle was met by changing the shaft of the handle of Young's bulb and spatula retractors so that while these are held firmly in position the operator is able to place a gloved finger in the rectum to the apex of the prostate and thus carry out the dissection under the sense of touch rather than by purely an optical landmarks.

In Cecil's technique the patient is placed on the table in the exaggerated lithotomy position and the bladder partially filled with fluid to permit the easy opening of the tractor. The curved tractor is then passed into the bladder and the V-shaped incision made in the perineum. The limbs of the curved V-shaped incision extend quite far back and the incision is carried through the subcutaneous tissues rather boldly. The finger is then passed down into the fossa in front of the fibers of the levator ani muscle and the bulb retractor is introduced.

With a pair of thumb forceps the ureters are picked up just back of the bulb and the central tendon is divided straight downward. With the set-off bulb retractor then held firmly in place, a gloved finger is introduced into the rectum, and by means of a specially devised, delicately curved clamp the entire bridge of tissue down to the apex of the prostate is grasped under the direction of the guiding finger in the rectum. The tissues are cut crosswise by the clamp with definite assurance that the rectum will

not be injured, and in this manner the fibers of the recto-urethra muscle are divided far back rather toward the rectal wall than toward the region of the external sphincter.

The handle and shaft of the tractor are then brought toward the operator, its bladder end thus being thrown freely into the bladder cavity so that the tractor may be easily opened, and by turning of the thumb screw the bladder end of the tractor is thrown at right angles to the shaft. Then by lifting on the tractor and pushing away the apex of the prostate is brought quite far up into the wound. The fibers of the levator ani muscle are pushed aside and the rectum is stripped back along the fascia of Denonvillier.

Up to this point the urethra has not been opened. The usual lateral incisions of Young are made as these have been found preferable to the throwing back of a large bridge of tissue. Adenomatous masses are freed by a blunt dissector and removed through each lateral cavity by Young's technique. When the masses from the lateral cavities and any suburethral lobes encountered have been removed an incision 3 cm. in length is made through the right lateral cavity and the edges of the prostatic urethra are picked up with Allison forceps.

The tractor is then removed and in difficult cases it is sometimes found advisable to introduce the straight tractor through this opening. A finger is passed in through the prostatic urethra and the neck of the bladder palpated. If an intra-vesical lobe is encountered, it is removed through this opening. If the neck of the bladder is found contracted, it is divided. After the removal of all obstructing tissue, a simple drainage tube is introduced through the lateral cavity at the bladder and packed about with cephalic gauze to control hemorrhage.

LEON CARMICHAEL, M.D.

# SURGERY OF THE EYE AND EAR

## ETE

Wiedemann, H. Injuries of the Visual Tracts of the Brain. (*Die Verletzungen der Sehbahnen des Gehirns*) *Zentralblatt für Chirurgie* 1909, 9, 437

More frequent than direct injuries of the optic nerve are indirect injuries due to fractures or fissures of bone. Usually other cranial nerves are also involved (the third, fourth, fifth, and sixth). In every case in which the lesion lies distal to the entrance of the central vessel into the optic nerve (1 to 20 mm behind the bulb) ophthalmoscopic signs are evident immediately. At the chiasm lesion of the cross fibers produces bitemporal hemianopsia whereas an injury behind (central) the crossing causes a so called homonymous hemianopsia.

A loss of both the left halves of the visual field occurs with injury of the tract of the primary visual centers, the optic radiation, and the right caudate. As the papillary fibers branch off at the primary visual center, the papillary reaction is normal in cases of central lesion, but when the lesion is situated further forward there is a hemianopic reaction. As the visual sphere in the cuneus has a wider expanse its incomplete destruction does not cause hemianopsia but homonymous scotomata result.

With destruction of both the visual spheres, cortical blindness, viz blindness with an unchanged papillary reaction, occurs. Mental blindness, a condition in which the object is perceived but not recognized, is due to double injury of the convex side of the occipital lobe or its medullary layer and is an optic agnosia. Alexia is another type of the same condition. This is occasionally seen in association with conjugated paralysis of the eye muscles following destruction of the angular gyrus.

LEWIS (2)

Wilkinson, O. The Present-Day Status of Squint Surgery. A New Operative Technique. *J Am M Ass* 9, Jan 1917

On the basis of seventy five cases operated upon during the past two years Wilkinson draws the following conclusions:

It is necessary to operate on children sooner than has been our practice in order that they may favor binocular vision at an age when binocular vision may be acquired.

We are able to straighten any case of squint at any age without doing tenotomy or in any way cutting or interfering with the function of the internal rectus. A tenotomy of 3 grade is contra-indicated in squint in young children.

In cases of deviation of 4 degrees or less it is sufficient to advance the external rectus; the

squinting eye only. In cases of higher degrees of deviation it is advisable to advance the external rectus muscles of both eyes.

4. In young subjects with low degrees of deviation about 3 mm of shortening is required to each 5 degrees of deviation, e. in case of squint of 5 degrees in a child under 10 years of age about 9 mm of shortening of the external rectus would be necessary to secure an accurate and permanent effect. In

case of from 10 to 25 degrees of deviation each 0.5 mm will correct 1 degree of deviation. In older subjects, 5 mm of shortening will approximately correct 1 degree of deviation. This holds good except in the very low degrees up to 5 or 14. The lower degrees require the ratio of 3 mm of shortening to 1 degree of deviation. In a few cases the author has shortened the external rectus 5 degrees. He finds that the ratio decreases, for example, that 15 mm will correct from 30 to 35 degrees of deviation. However he advises against trying to advance a muscle to such an extent because it is more difficult, it may restrict the movements of the eye and it may cause some exophthalmos.

In cases with high degrees of deviation, say 40 degrees, 10 mm advancement of each external rectus is necessary. In cases of deviation of 50 degrees or more, the ratio increases 15 mm of advancement of each external rectus with the wearing of the brace ten days will correct as much as 30 to 35 degrees of deviation whereas 1 mm of advancement on one eye only will certainly not correct more than 3 degrees of deviation. It seems that when both eyes are operated on at the same time the ratio of correction is somewhat increased.

5. Over-correction is necessary to secure a permanent result. The eye should deviate about 8 to 10 degrees after the sutures are out and the brace has been removed. This is an advantage as it aids the fusion faculty to secure binocular vision as the previously crossed eyes is assuming its permanent position.

6. The use of the caliper or some definite measuring device is essential for accurate work. The method of suturing through the stump avoids the dangerous scleral stitch and secures a firm anchor age, while the placing of the suture in the well-dissected muscle makes possible more exact measurement of the amount of shortening produced. The importance of this is evident as it enables us to operate on children under ether anesthesia with the same confidence with which we operate on adults under local anesthesia, and to operate before fixed habits are formed before anatomical changes in the muscles and blindness of the squinting eye develop and before the possibility of fusion training is lost.

JAMES P. FITZGERALD, M.D.



Wood, D. J. Intra-Ocular Cysticercus. *Brit J Ophth* 422 vi, 450

Wood has seen 21 cases of intra ocular cysticercus, 14 of which he discusses in this paper. In one of the two cases discussed there was some doubt in the diagnosis. The other was that of a druggist who was also a farmer and who came to Wood because of pain in the left eye of three weeks duration which had been much more severe for four days. On the lower outer part of the iris was a very distinct cystic body, hid in the center projecting into the pupil, and fixed to the iris by numerous fine threads like spider web or cotton wool. There was severe iritis. Atropin produced no effect, and after ten days it was evident that the cyst was larger. No movements could be detected, but observation was difficult because of severe photophobia.

Under an anæsthetic Wood tried to remove the cyst with his bit of iris, but at the first touch of the forceps it ruptured into the anterior chamber. Fragments were removed but the threads were elastic and held the iris. No hooklets were found in the debris. The threads appeared to be hyaline, with cells at intervals. There was immediate relief from the pain, but when the patient left the hospital the pupil was largely occluded by lymph.

THOMAS D. ALLAN, M.D.

Wood, D. J. Cysts of Long Duration. *Brit J Ophth* 423 vi, 452

The patient, a woman aged 26 years, consulted Wood for the removal of a whit mark from her left eye. On casual inspection this mark had the appearance of a round nebula with yellow opacity in its lower part. The patient stated that it had been present ever since she had measles twenty years previously.

Careful examination revealed a round cavity like double watch glass which contained some thick pus in its lower part and pressure became changed in shape. The cavity had clearly defined circular margin and extended from the corneal margin to the inner third of the pupil. The eye was perfectly quiet, there had never been any pain, and the patient was sure that any change had occurred. The cavity extended back to Descemet membrane. The fundus was visible through the clear part of the cornea, and vision was 6/36.

Wood incised the cavity with a discission needle and removed the pus by irrigation. The eye then looked nearly normal. While the outline of the cavity remained clearly visible on careful inspection it was no longer conspicuous.

THOMAS D. ALLAN, M.D.

Henseler, B. T. and Henseler, F. H. The Early Development of the Corneal Tubercle: A Study in Slit-Lamp Microscopy. *Arch Ophth* 9 4

This paper reports a study of the development of experimental tuberculous of the cornea in rabbits. Three strains of bacilli were used in of them vir-

ulent and one not virulent. For comparison the authors inoculated another group of rabbits with solution of staphylococcus aureus and in a third group injected mercuric sulphide.

The use of the slit lamp and microscope made it possible to observe much earlier changes than those recorded by other investigators. The first changes in rabbits injected with tubercle bacilli appeared from three to eleven days after the injection. No explanation can be offered for the delay of more than four days except that it must have been due to higher resistance of the animal.

The first change observed was a very faint injection of the conjunctival vessels at the limbus. In the first rabbits a pronounced acceleration of the circulation at the limbus as also was noted at the same time. Not only were the vessels dilated but the blood flowed through them with much greater rapidity. In all the white rabbits inoculated with virulent strain of bacilli an injection of the small vessels of the iris preceded or accompanied the limbus hyperæmia. In the eyes injected with mercuric sulphide there was injection of the vessels of the bulbar conjunctiva but no pronounced acceleration of the circulation at the limbus.

Cellular deposits on Descemet's membrane were easily seen when virulent culture was used. As rule these deposits were found on the most dependent part of the cornea. Those noted on the less were quite irregularly distributed, but most numerous in the periphery. The greatest changes were found in the cases in which heavy emulsion was used for the injection.

The formation of vessels was perhaps the most characteristic of the lesions seen in tuberculous of the cornea. The earliest vessels were also as observed at the limbus above, however the corneal injection was made. These vessels usually attained greater length than those coming in from below or the sides and eventually extended into the opacity at the site of injection. In the most advanced stages the entire cornea was sometimes vascularized. The earliest vascular shoots were seen two or three days after the first signs of reaction. They developed as short strands coming off of the superficial conjunctival vessels at the limbus and lay superficially on the cornea throughout their course. After two or three days of growth they met and formed capillary loops through which an exceedingly active circulation was maintained. As the vessels became larger they assumed brown like growth and increased in width as well as length. They grew much more rapidly when a virulent culture was used. When healing began, the circulation gradually became slower and the vessel decreased in size. In the authors experience the proximal loops never completely disappeared, though they have been grossly irritable. When such an eye as injected or otherwise irritated the blood flow through these capillaries as increased and they could again be seen with the unaided eye as fringe of newly formed vessels.

THOMAS D. ALLAN, M.D.

Charles, J. W. Neuropathic Keratitis the Result of Focal Infection. *Am J Ophth* 92 701

The author gives his reasons for considering dendritic keratitis a terminal nerve lesion and reports a case which resisted all of the usual methods of treatment but responded in two or three days to palliative treatment for suppurative ethmoiditis.

JAMES P. FITZGERALD, M.D.

Lent, E. J. and Lyon, M. B. Embryonic Fibrovascular Sheath of the Crystalline Lens. *Am J Ophth* 9 706

The authors review the literature, report an interesting case and discuss the differential diagnosis of embryonic fibrovascular sheath of the crystalline lens. This condition may be mistaken for glaucoma, but as glaucoma grows rapidly careful measurement over a short period will determine the diagnosis.

Glaucoma is visible with the naked aperture if seen early but a fibrovascular sheath requires the use of a plus 6 to plus 30 lens to bring out the crystalline lens connected with it.

JAMES P. FITZGERALD, M.D.

McCabe, F. J. Glaucoma Its Etiology and Treatment. *Rhod Island M J* 9 301

McCabe briefly reviews various theories regarding the cause of glaucoma and the results obtained by operative and non-operative treatment. He recommends combining the two methods, considering each

case individually, studying the condition carefully and regulating the patient's habits and diet. For glaucoma simplex with little or no increase in tension and only slow change in the fields of vision he believes conservative treatment is best.

T. D. ALLEN, M.D.

## EAR

Eitner, E. The Correction of Prominent Ears (Anlegen und Verkleinern hatchingender Ohrmuscheln). *Med Klin* 17 2 2122 7

Previous to the operation the ear is brought to the desired position and the most extreme line of contact between its posterior surface and the skull is marked. If the ear is drawn sharply downward, the line of demarcation appears as an ellipse the long diameter of which is formed by the fold of reflection. The skin incision is then made through the transverse diameter and the skin and perichondrium are reflected up to the mark. The cartilage is divided in the same direction and a sickle-shaped piece removed in a direction critical to the incision downward and upward. If it is desired merely to fasten the ear down, the strip need be only a few millimeters wide, but if a reduction in the size of the ear is also desired, the strip must be correspondingly wider. After the suturing of the cartilage and the perichondrium the skin is excised to the line of demarcation and the ear fixed in the desired position by three or four sutures.

THEOPH. (L.)

# SURGERY OF THE NOSE THROAT AND MOUTH

## NOSE

Dean, W. A Case of Suppurative Ethmoiditis Complicated by Orbital Cellulitis and Acute Suppurative Dacryocystitis. *Archives M J* 9:1216p

In the author's case there was a history of nasal catarrh for many years, obstruction of the nasal lacrimal duct for seven years, and purulent discharge from the nose for 1 month. 7 days before the patient seen by Dean, the discharge stopped and the eye became often shut. At the time of examination the pupils as intense the temperature degrees F and the face swollen. The eye protruded least in. Only the upper portion of the cornea could be seen and then as hazy. The conjunctiva prolapsed and necrotic. On breaking the nose no pus could be obtained. The middle turbinate was polypoid.

Several incisions were made in the lid. The lacrimal and adjacent plate of the ethmoid was found to be necrotic. Pieces of polypoid degeneration the inferior ethmoid cells were excised and a large drain was inserted through the nose into this region and several drains through the skin of the lids. Pus continued to run from the operation wound for number of days. A large ulcer of the cornea healed gradually. The antrum which was found to be infected, was operated upon and treated. T. D. Allen, M.D.

## MOUTH

McArthur, J. L. Atypical Operations on the Jaw and Mouth for Malignant Growths. *J Am M A* 9:1181, 1911

Case 1. The patient was man 40 years of age with history of pyorrhea and consequent removal of the first and second molars followed by carcinoma of the unhealed gum and alveolar process with slow invasion both directions. Examination showed no invasion of the antrum or orbit. The mandibular incision had been made the 1 superior maxilla were divided from each other by an electric saw (1) at the base of the first left molar through the palatal foramen mesially (2) the superior maxilla and maxillary junction and (3) at the nasal orbit along the entire length of the infra orbital margin. The inferior orbital plate and the superior maxilla were left intact. The function and appearance of the eye remained unchanged. Cervical glands were evident and none have yet been excised.

Case 2. This case as that of man with recent small growth involving the gum, the alveolar process, and the jaw at the former site of 1 lower molar, and a definite palpable gland immediately

beneath the right nasal. The macroscopic showed carcinoma. At operation the incision was made downward from the angle of the mouth 1 beneath the jaw curving back past the angle and the flap as detached from the jaw and retracted upward. The electric saw was used to excise a rectangular section of the ramus, including the alveolar process sufficient amount of dense osseous bone was left to form a bridge 5 cm in each diameter to maintain the external contour. The fragment removed measured 5 cm. Sixteen days later primary anastomosis had occurred and the incision was almost invisible. The involved gland was removed without tearing its capsule. The macroscopic showed it to be a typical carcinomatous gland. There was no recurrence or facial deformity four and one half years later. The patient died the result of fall.

Case 3. The patient was man 44 years old who had a lesion surrounding the decayed root of the second right lower molar which failed to heal after the removal of both molars, curettage, and the use of cautery. This spot had been present for ten weeks but was not large. No glands were evident in the neck. The macroscopic showed carcinoma.

At operation the outer aspect of the lower jaw was exposed by incision beginning on the lower lip at the angle of the mouth curving down and along the natural fold of the cheek, and cutting all but the marrow and below the jaw. The skin of the cheek was then drawn inward and the tissues were cut back.

Following the jaw down to the bone. Beginning at the angle of the mouth the mucosa as then sectioned so to conserve as much of the normal membrane as possible. The incision as then made through the healthy soft parts and periosteum 1 1 cm radially from the growth 1 perpendicular as long as 10 cm and a connecting long as 1 cm were made at a distance from the free alveolar margin to avoid beginning infiltration and to leave a strong bony ridge to prevent deformity.

Case 4. This was the case of 4 year-old girl with tumor of the mental prominence which deformed the chin into a round mass and loosened the incisors of the lower jaw. The pathologic report fragment as giant cell sarcoma. At operation the soft tissues were separated from the chin by an incision along the mouth the mental prominence as exposed through the buccal orifice and the lower lip was stretched beneath the bony chin. Incision revealed a thin layer of bone covering firm spheroidal tumor. The growth as not bony and yielded readily to sharp knife but not to the curette. The entire mass, such as the nose of an English albatross, was shelled out. The roots of the incisors protruding into the smoothly lined bony cavity were amputated. All suspicious areas were removed sufficient alveolar

process being left to form a bridge between the right and left maxillae. Two years later the alveolar bridge was fractured by the chewing of brittle food. After another two years a graft from the patient's tibia was implanted and adipose tissue was inserted beneath the skin to correct the deformity.

P. CL. W. SWEET, M.D.

Bainbridge, W. S. Cancer of the Tongue. *Pitfalls in Diagnosis and Treatment. J. Am. M. Ass.* 9, June, 1940.

The following cases were selected from 700 recorded cases of tongue lesions.

**Case 1.** The patient was a man, 41 years of age, who was an excessive cigar smoker and in the habit of holding the cigar in the right side of his mouth. A small, recurrent sore developed on the tongue  $\frac{1}{2}$  in from the right side and  $\frac{1}{2}$  in from the tip. This sore had received mixed treatment with silver nitrate, the roentgen rays and other agents but had persisted for a number of years. Repeated Wassermann tests were negative. The mouth was in fair condition, and there was involvement of the glands of the neck. The involved glands were removed, the lingual arteries were ligated, and a few weeks later the tongue was completely excised. Following the operation the patient gained in weight and strength and became able to attend to his business. One year later he died from recurrence in the neck.

**Case 2.** A man aged 49 years noticed in May 1902, a small, elevated spot half way back on the dorsum of the left half of the tongue. Following the local application of alum and the discontinuance of smoking this lesion disappeared but it reappeared when smoking was resumed. The patient came for consultation in December 1903, when he had lost considerable flesh and strength and was somewhat cachectic.

Examination revealed a hard, crater like ulcer involving the left anterior third of the tongue with the exception of the tip which was covered with a brownish, foetid fur. The reports of two pathologists confirmed the diagnosis of vascular epithelioma. Immediate operation was refused by the patient who insisted upon a trial of roentgen ray treatment. The latter proved futile despite nine weeks' systematic application. In the meantime the growth extended to the right side of the tongue and induration of the floor of the mouth became evident. Several glands were palpable on both sides of the neck, and there was marked dysphagia. In March, 1904, the submaxillary and sublingual glands on either side were removed with the salivary ducts and the lymphatic neck glands were removed en masse where this was possible. Ten weeks later the tongue was completely excised and also a large part of the geniohyoid muscles, the hyoglossus muscles, the inferior third of the pillars of the fauces on the left side and part of the anterior pillars of the fauces on the right side. In a few hours the patient was able to swallow fluids. He was discharged a month later when he had gained 15 lb.

He was then able to masticate solids, to taste, to talk intelligibly and even to sing. In May 1905 a small ulcerating lesion appeared in the anterior portion of the mouth. This was fulgurated. A few days after the operation the patient succumbed to pneumonia.

Cases 2 and 3 demonstrate that some cancers of the tongue are not recognized as such but are mistakenly diagnosed and treated as non-malignant neoplasms.

**Case 3.** This patient, a man aged 43 years, was operated upon in January 1907 for the removal of a small nodule on the tip of the tongue. A wedge shaped section (3.5 cm long) of surrounding healthy tissue was also excised. The patient refused excision of the neck glands. The microscope showed suspicious cells only at the apex of the removed section and none in the nodule. The following day another small section was removed at the apex of the incision in the tongue. There was no recurrence of the epithelioma. The patient disappeared during the recent war.

**Case 4.** The patient was a man aged 60 years who, in December 1905 discovered a small, wart like spot on his tongue. A diagnosis of cancer was made and radium applied once in January and again in March, 1906. As the spot continued to increase in size, excision of the tongue was advised. Examination showed the tongue to be spotted with leukoplakia. The center was a typical epithelioma within an ulcerating mass the size of a five-cent piece. The surface of the tongue suggested syphilis. The Wassermann reaction was 4 plus. After five weeks of antisyphilitic treatment the inflammation abated, leaving an ulcer the size of a split pea. The cancerous and sclerotic part of the tongue was removed by conservative operation. The pathologic report was epithelioma. The patient recovered but in January 1907 died of acute pneumonia.

Cases 3 and 4 demonstrate that errors are made in diagnosing the type, stage, and extent of tongue cancer.

**Case 5.** The patient was a woman 28 years of age with a history of appendectomy performed in September, 1909 and followed the next day by a sore little to the left of the median line on the lower lip. The lesion was diagnosed as a fever or other sore, and treated with ointments. It increased in size, and laboratory examination six weeks later showed angiosarcoma with considerable mitoses. Radical operation was advised. Examination of the lip in October 1909, showed an elevated, hard, indurated ulcer the size of a ten cent piece. The tongue was covered with leukoplakia spots, one of which was nodular. One neck gland under the chin and two in the left submandibular region were involved. The Wassermann test was 4 plus. After antisyphilitic treatment consisting of four intravenous and six intramuscular injections and the local application of mercurial ointment the mass on the lip and the neck glands disappeared. As the Wassermann reaction remained unchanged, the antisyphilis

treatment was continued. In February 1912 the Wassermann test was negative. In May 1913 the patient reported excellent health and continued negative Wassermann reaction.

Case 6. A man aged 40 years sought treatment for a sore at the base of the tongue which had been noticed for nine months. The Wassermann reaction had been negative. A diagnosis of cancer was made and radical removal of the tongue advised. Examination in June 1907 showed a deep ulceration 2.5 cm. wide extending backward from the anterior one third of the dorsum of the tongue to the epiglottis, also enlarged cervical and submandibular glands. Two pathologists reporting on section excluded cancer. After few weeks of atrophy the ulceration disappeared. There was no recurrence for 4 years. The patient was last sighted of during the recent war.

Case 7. The patient was a boy aged 1 year, whose tongue showed a swelling the size of a cherry which had been present for eight months and had begun to grow large. The tumor was diagnosed as malignant and the patient referred for radical operation. Examination in March, 1914 showed an irregularly edged tumor the size of about situated on the right margin of the tongue and extending nearly to the center. The surface of the tongue was normal (not much inflamed). The lesion was diagnosed as benign and the growth and ulcerated area were removed. The pathologic report was: "high epidermis, papillomatous type." Three months later as growth of the mouth was removed. There was no recurrence for more than eight years.

Cases 5, 6, and 7 demonstrate that lesions of the tongue may be mistakenly diagnosed and treated as cancer.

P. C. W. S. M. S.

# BIBLIOGRAPHY of CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE—The bold face figures in brackets at the right of references indicate the page of this issue on which an abstract of the article referred to may be found

### Operative Surgery and Technique

- The Italian plastic method G B RANNEY Cincinnati J M 9 1, 21, 255  
The passing of the endosse bougie W K LACK Therap d Gegera 9 1, 104, 235  
Improvements in pre-operative and postoperative care F B T ELLOR, W I TERRY and W C ALLEN J Am M Ass, 10 2, 1012, 578 [72]  
The introduction of ether into the abdominal cavity for the prevention of peritonitis A E M VIELSTAND Journal Allghechirurgie, abendliche beilage 9 2, 220, 95  
Postoperative adhesions in the abdominal cavity A Mayer Zentralbl f Gynaek 9 2, 211, 240 [73]

### Anesthesia

- Observations of an anesthetic D RAPPOPORT Am J Surg 92, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

- On reflexes (including abdominal rigidity and shock") under full general anesthesia J D MORTIMER Med Press 9 229, 230  
T cases of epileptiform convulsions during anesthesia H H L P NEW Lancet 9 220, 221  
A study of metabolism in chloroform poisoning F P UNGERLICH and R LUTHER J Med Research 9 22, 23  
The new anesthesia procedure of Ganes and Wieland BERNHARD Zentralbl f Gynaek 9 219, 220 [74]  
Remarks on the technique of uterine cradle in obstetrics I G KRELL Am J Surg 9 220, 221, 222, 223, 224  
Surgical analgesia J T G TERRY and J GULLY Am J Surg 9 220, 221, 222, 223, 224  
Surgical analgesia: clinical observations J M RICE Am J Surg 9 220, 221, 222, 223, 224  
Temporary disturbances due to local anesthesia L L ROSS J Lab & Clin Med 9 22, 23

### Surgical Instruments and Apparatus

- A new instrument for opening abscesses in the laryngopharynx I R SUTTER J Am M Ass 9 220, 221, 222, 223, 224  
A cannula which monitors, cleanses, and airtight the required air and simulates the normal mechanism of coughing HAASTVOERK Monatsschr f Geburt 9 22, 23  
A new forceps for use in the dissection of nerves P JILKIN Rev Soc Med Argent 9 2, 220, 221

## SURGERY OF THE HEAD AND NECK

### Head

- The structure of the vertebrate head W B PETERSON Brit M J 922, 223, 224, 225  
Fractures of the skull P SACRY South M J 9 22, 23  
Fracture of the skull with embedding of the fragments GUTZBERGER Rev Assoc med argent 9 220, 221, 222, 223  
Surgical operations on gunshot wounds of the skull and its contents during the 41 914-9 7 M O FRENDA Kasper M J 92, 22, 23 [74]  
The circulation of the cerebrospinal fluid its importance in acute cerebral injury H JACKSON J Am M Ass 922, 223, 224, 225  
Infection of the sigmoid and lateral sinuses report of sixteen cases H I LILLIE Surg Gynec & Obst 9 2, 22, 23, 24 [74]  
Lateral sinus thrombosis D M CAMPBELL Laryngoscope, 1923, 220, 221, 222  
Hydrocephalus J FRASER and N M DOTT Brit J Surg 922, 22, 23  
The differential diagnosis of cephalocle GROSS Am J Clin Med 9 2, 220, 221

- Aterocle of the brain A D MCCARTHY J-Lancet, 922, 22, 23  
Spontaneous occipital pneumocele of antenatal origin operation, recovery L KIRKENDALL and G WONES Bull et mem Soc de chir de Par 1922, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

- Rhinodermatoma II GOSMAN N York M J & Med Rec, 1921, 100, 39.  
The restoration of the maxilla bone II BARNES Brit M. J 19 11, 675.  
The reconstruction of the inferior maxillary arch by osteoplastic fracture Zentralbl f Chir 19 216, 949 [76]  
Some points of technique in cleft palate surgery J A PERRY Internat J Otolaryngol and Surg & Radiology 10 2, 121, 122.  
Harelip and cleft palate deformities, some of the types and their operative treatment W B BARNES Ann Surg, 19 2, 1191, 121 [77]  
The operative treatment of complete double harelip V A2 Ann Surg 9 2, 1191, 41 [77]  
A large operant defect in the pharynx covered by primary transplantation of flaps II FICKLER Zentralbl f Chir 1921, 11, 979 [79]

### Neck

- Report of a case of suppurative cervical lymphadenitis in a tuberculous patient due to oral infection II BAKER Dental Cosmos, 972, 111 1096  
A case of echinococcus disease of the submandibular gland A. A. DEMCHENKO Zentralbl Med J 9 2, Jan Feb 4  
The thyroid in infancy T L BERNARD Minnesota Med 1921, 591

- Studies of thyroid disorders. IV. The intravenous administration of glucose solution in the treatment of adenoma following thyroid operations E. COHEN and E. J. BARNES N York State J M 972 216, 160  
Struma and intratracheal struma of the opposite side W. LANGE Zentralbl f Chir 9 216, 55  
Gotters reports of the examination of 115 students J G T. VOGT Wisconsin M J 9 211 212, 81  
The degenerate risk factor M B TAYLOR J Am M Ass, 9 2, 1191, 29 [79]  
The basal metabolism in non toxic goiter and its bearing on thyroid cases, with particular reference to its bearing on the differential diagnosis J H. LEVINE and H. W. B. ORR Arch Int Med 9 2, 1191, 307  
A study of exophthalmic goiter and the involuntary nervous system IX. An estimation of the pathogenesis and the evaluation of therapeutic procedures in exophthalmic goiter L. KRAVITZ, C. C. LEE, and H. T. HIRN J Am M Ass 9 1191, 213  
A non-surgical method of treating toxic goiter ROBERTSON Am J Clin Med 972, 1191, 341  
Thyrotoxicosis M O H. GILES Med J Australia, 9 11, 101  
Thyroid surgery and the rhinodermatoma syndrome J R. EASTON and S. EASTON Ann Surg 9 2, 1191, 415  
The causes of surgical failure in hyperthyroidism J F. LANE and S. LEVINE J Am M Ass 9 2, 1191, 199  
The pulse control of the blood following thyroidectomy W. A. HILSON J Exper Med 9 2, 1191, 469

## SURGERY OF THE CHEST

### Chest Wall and Breast

- The surgical treatment of acute suppurative pleuritis L. HIRSTON, Specialist, 1921 216 3 4  
Empyema J F. GARWOOD Illinois M J 9 2, 1191, 115  
The pathology and bacteriology of empyema and abscess of the lung J. MILLER Canadian M Ass J 972, 1191, 7  
The treatment of empyema J B. MACKENZIE Wisconsin M J 9 2, 1191, 78  
The closed method of treating empyema J J. WARD J. LANCET, 1921, 216, 3 2  
Tumors of the breast O R. WATTS J Med Ass Georgia, 972 21, 385  
Tumors of the breasts J C. BLUMENFELD Northwest Med 9 2, 1191, 115 [80]  
The diagnosis and treatment of tumors of the breast J L. LAURENCE J Med Ass Georgia, 9 2, 1191, 115  
Paget's disease C. CLARK NO Ann Int Chir 972 1, 100  
Carcinoma of the breast, its diagnosis and treatment C. F. BARNETT J Missouri State M Ass 19 2, 1191, 4 5  
The treatment of cancer of the breast. F H. HARRIS Minnesota Med 19 2, 1191, 556

### Trachea and Lung

- The comparative value of the exploratory methods employed today for the localization of lesions of the lung and pleura I. GREENE Illinois M J 9 2, 1191, 105  
Abscess of the lung A. L. LOCKWOOD Surg & Rec & Obst, 972, 1191, 24  
Bronchiectatic lesions report of case A R. FLETCHER J Am M Ass 9 2, 1191, 111  
Loss of sight in cases of artificial pneumothorax L. S. T. BURNELL and M. V. GARWOOD Lancet, 1921, 192, 80

### Heart and Vascular System

- Hydatid cysts of the heart, 11th report of case H. W. MILES Surg Gynec & Obst 9 2, 1191, 415 [80]  
Rupture of the heart H. J. COOPER Med Times, 9 2, 1191, 216  
A case of rupture of punctured wound of the ascending aorta J J. LEE Kansas Medical Postgraduate, 19 [80]

### Pharynx and Esophagus

- The esophagopharynx in diagnosis and treatment M E. PERRY Kentucky M J 9 2, 1191, 11  
Acute disease of the esophagus the dietary regimen and the liver A. R. BELL Ohio Chir 972 1191, 310  
The early diagnosis of stricture of the esophagus produced by caustics J. LAURENCE L. GOSWAMI, 9 2, 1191, 104  
Carcinoma of the esophagus with perforation of the aorta J J. WARD J Am M Ass 19 2, 1191, 115

### Miscellaneous

- Stenosis on the respiratory system in health and disease J A. M. and E. L. VIVIAN J Lancet, 972 216, 1 9  
The abdominal signs and symptoms of thoracic disease H. BARNES Northwest Med 19 2, 1191, 11  
Congenital diaphragmatic hernia J S. LATT Am J Dis Child 972 1191, 297  
Diaphragmatic hernia J R. MILLER Vermont State M J 972, 1191, 115  
Sphygmographic hernia—non traumatic, 11th report of case original communication H. HARRIS J Missouri State M Ass 972, 1191, 45 [81]  
Congenital diaphragmatic hernia J B. H. W. Brit J Surg 972 2, 297

Diaphragmatic hernia in newborn report of case  
C M DAVIS Ann J Dis Child 93 xxiv 356  
The diagnosis and surgical treatment of incarcerated  
diaphragmatic hernia A SOER Deutsche Zeitschr f  
Chir 922, clxx, 82

Angiosarcoma of the mediastinum B KOTT Deutsche  
med Wchnschr 922, xlviii, 94  
Mediastinal lymphosarcoma invading the myocardium  
WOLFF and GIER Bull et mém Soc anat de Par 922  
302, 340

## SURGERY OF THE ABDOMEN

## Abdominal Wall and Peritoneum

An inguinal hernia N F SINCLAIR Lancet, 19 cm,  
76  
Direct and indirect inguinal hernia on the same side  
H E S SIVEN Lancet, 9 cm, 763  
Recurrences following operations for inguinal hernia  
W FULLER Surg Gynec & Obst 922, xxiv 337  
Operative injury of the bladder during herniotomy  
because of an incarcerated inguinal hernia S S KLEIN  
Westn Chir popan oblates, 922, 4, 69  
Recurrences following operations for inguinal hernia  
W HILMERT Surg Gynec & Obst 922, xxiv 43  
Unusual complications in the cases of femoral hernia  
S L LUTHERSON Brit J Surg 922, x, 297  
The hernia operation under local anaesthesia S R  
BRYANT Internat J Surg 922, xxiv 333  
The prognosis of the radical cure of hernia W T GARIN  
STRAID Illinois M J 922 xlv, 287  
The morbidity of herniotomy H N BLACKBURN  
Am J Surg 922, xxiv, 244  
General septic peritonitis and its treatment A C  
BROOK Northwest Med 922, xxx, 96 [62]  
The surgical treatment of peritonitis from induced  
abortion W SCHW Mometasch f Geburtsh Gynaek  
922, lxxv, 40  
The clinical significance of abdominal adhesions J  
FARMER and T H MORRISON South M J 922,  
xv 504

## Gastro-Intestinal Tract

Aphorisms concerning gastroduodenal diagnosis L O  
COLE Am J Surg 922, xxvii 249  
A case of congenital pyloric stenosis A M FAYOT  
Brit M J 922, x, 644  
Experimental pyloric stenosis I H TOMPKINS and M  
A BERNARD Am J Dis Child 922, xxiv 306  
Hypertrophic stenosis of the pylorus J C OLIVER Ann  
Surg 1922, lxxvi, 444 [63]  
Congenital hypertrophic pyloric stenosis and its treat-  
ment with tropine B V HALL Am M J 922,  
lxxvi, 324  
The symptomatology of an extensive stenosis of the  
stomach R A LA JAMA Kansas Med J 922, 1, 8  
The surgical treatment of syphilis of the stomach E A  
CHAMBERLAIN Ann Surg 922, lxxvi 449 [63]  
Multiple polyps of the stomach with the report of  
case G P MILLIS Brit J Surg 922, x, 20  
Gastric lacer J SCHLICKS Wasmach genescl  
1, plexr 9 10, 47  
The origin of gastric ulcers from eating hot food and  
eating fast A HERRMANN Med Klin 922, xlviii, 935  
The diagnosis and treatment of peptic ulcer and gall  
bladder disease D DEAL and C W MILLER Illinois  
M J 922, xlv, 20  
Gastric and duodenal ulcer C I SCHUBERT Ann Surg  
922, lxxvi, 470 [63]  
Gastric and duodenal ulcer and cancer G W CHALK  
Ann Surg 1922, lxxvi, 457 [63]  
The peptic ulcer of the stomach and duodenum  
KROEMER Med Klin 922, xlviii, 894

The hour glass stomach in the dorsal position K HIRT  
KROEMER and L RUMM Wien Arch f innere Med  
922, lv 870  
Investigations of the histology and healing of gastric  
and duodenal ulcer E PERMA Acta chirurg Scand,  
922, lv 286 [64]  
The problems and the progress of gastric ulcer surgery  
W VAN HOO Med Press, 922, xlv 360 [64]  
Parenteral stimulation treatment of gastric and duo-  
denal ulcer B O PERHAM Med Klin 922, cviii,  
958  
A simple non-operative method of treating gastric ulcer  
preliminary report A A LINTNER J Am M Ass 922,  
lxviii, 3  
The choice of operation for gastric ulcer G WHOLLEY  
Ann Surg 922, lxxvi, 476 [64]  
The surgical treatment of gastropyloric and pyloric  
ulceration G WAGNER Brit M J 922, x, 640  
The von Leebberg fistula of the pylorus T T IN  
ALLARY Orono Med J 922, lxxvi, 67  
Intussusception of the stomach following gastro-entero-  
stomy R LUTHERSON Ann Surg 922, lxxvi 543  
Late results of gastro-enterostomy E H POOL and P  
A DYER Ann Surg 922, lxxvi, 457  
The treatment of callos gastric ulcer by trans-entri-  
cula resection by the Kruse method M STERNBERG Beitr  
klin Chir 922, cxvii, 400 [67]  
Acute perforation of carcinoma of the stomach M  
BATH W Zentralbl f Chir 922, xlv, 96  
Gastrostomy for cancer of the stomach J M R  
STRICK Rev clin 922, v, 33  
The surgical treatment of gastric and intestinal he-  
morrhage H FRIEDLÄNDER Wien med Wchnschr 922,  
lxviii, 845, 866, 920  
Injury to the bowel with recurrent hemorrhage M  
HOLZ Brit M J 922, x, 689  
Acute intestinal obstruction in infancy and childhood  
brief review of fifty five cases E W PATTERSON Surg  
Gynec & Obst 922, xxiv, 436 [67]  
Three cases of intestinal obstruction H I BOWMAN  
Med J Australia 922, x, 358  
Intussusception review of recent literature and re-  
port of cases G SCHWARTZ N York M J & Med Rec  
922, cxvi, 449  
Six cases of intussusception after operation H WHITE  
LOCH Proc Roy Soc Med Lond 922, xv Sect Dis  
Child 57  
Acute intestinal obstruction J O'CONNOR Brit M J  
922, x, 598 [68]  
A note on the cases of gall stone ileus F C PERLES  
Lancet, 922, cm, 8  
The treatment of ileus with lumbar anesthesia WAGNER  
Zentralbl f Gynaek 922, xlv, 225  
A foreign body lodged in the duodenum C A PERLES  
Med Klin 922, xlviii, 16  
The removal of pen from the third part of the duode-  
num E F HIGGINS Brit J Surg 922, x, 30  
Gastric acidity and duodenal lesions G LIND Riforma  
med 922, xxviii, 966  
Duodenal ulcer C ROWEN Practitioner, 922, cxv,  
283



The losses of the duodenal fistula after resection of the stomach. O. KELLER. *Zentralbl. f. Chir.* 912, 215, 1913.  
The straight vessel of the terminal ileum. R. L. P. FERG. *Gynec. & Obst.* 9, 2331, 1913.  
Intestinal fecal infection. R. SMITH. *Ann. Surg.* 9, 217, 1913.  
Intestinal diverticula. JACQUEMY. *Chapel med.* 9, 2, 1913.

The diagnosis and treatment of anastomotic colitis. A. C. REPP. *Int. J. M. Sc.* 19, 1913, 517.  
Malabsorption syndromes of the colon and rectum. J. J. JONES. *Bull. N. Y.* 19, 2, 21, 1913.

The results of the operative treatment of carcinoma of the colon in the Albertsberg Hospital. J. J. JONES. *Zentralbl. f. Chir.* 9, 2, 215, 1913.

Specimens showing carcinoma of the pericolic colon and rectum co-existing with chronic acute colitis. C. GORDON. *W. Mon. Proc. Roy. Soc. Med. Lond.* 9, 1913, 1913.

Position of the appendix. A. H. HARR. *Deutsch. med. Wochenschr.* 9, 2, 4, 1913.

Appendicitis. H. I. HARR. *Minnesota M. J.* 9, 2, 1913.

Acute appendicitis. R. I. S. Minnesota. *Med.* 9, 1913.

Traumatic appendicitis—a case of acute peritonitis probably caused by external trauma. R. G. GARDNER. *and W. R. K. 24. Connecticut M. J.* 19, 1913, 1913.

The terminal ileum of acute appendicitis and acute right jejunitis. M. WATERS. *Lancet*, 422, 1913, 1913.

Carcinoma of the appendix. J. J. JONES. *Deutsch. med. Wochenschr.* 19, 2, 21, 1913.

The pericolic form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The chronic tubercle of the appendix. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

The perianal form of appendicitis. C. FORD. *Canad. M. J.* 19, 2, 21, 1913.

Hypertrophied anal papilla. C. J. DRYCE. *N. York M. J. & Med. Rec.* 19, 2, 1913, 1913.  
Non-anastomotic treatment of hemorrhoids. B. STONE. *Hospital Recorder* 1913, 217, 1913.  
The anastomotic treatment of hemorrhoids. J. D. SCOTT. *Hahnemann Month.* 9, 2, 1, 4, 1913.  
A case of pythecoma of the anus. P. LOCKHART. *Proc. Roy. Soc. Med. Lond.* 9, 2, 1913, 1913.

## Liver, Gall Bladder, Pancreas, and Spleen

An epidemic of infectious mononucleosis. G. G. W. CEE. *T. 222, 512, J. M.* 9, 2, 1913, 1913.

Hepatic portal thrombosis of the liver. plastic of the abdominal wall with the aid of resection of the liver. J. J. JONES. *Zentralbl. f. Chir.* 9, 2, 215, 1913.

Two cases of pythecoma of the liver with symptoms of abdominal form. W. K. H. 1913. *Glasgow M. J.* 1913, 1913.

Abcess of the liver. A. O. BLACK. *Internat. J. Surg.* 9, 2, 1913, 1913.

The bacteriology of the gall bladder. J. G. DRYCE. *Am. Surg.* 1913, 1913.

The bacteriology of human ystic hole. D. G. KERR. *Trans. Assoc. M. J.* 9, 2, 1913, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

The pericolic form of gall bladder and pancreatic disease. J. J. JONES. *Canad. M. J.* 19, 2, 21, 1913.

## Miscellaneous

- The differential diagnosis of abdominal pain C S  
SILVER Illinois M J 9 xlv, 274  
The acute abdomen II B BORDEN Nebraska State  
M J 922, vii, 347  
A mesenteric cyst of jejunal origin complicated by  
retrojejunal position of the transverse colon J I HENNER  
Brit M J 9 2, iv, 800  
Sclerotic abscess II M CLUTE Boston M & S J  
9 2, clxxvii, 68 [91]

- Drainage in abdominal emergencies F F S SMITH  
Indian M Gaz 192 iv, 375  
The enteropneustic abdomen: developmental factors and  
treatment J B FITZ J Med Ass Georgia 9 21, 43  
Intra abdominal gunita A L LEVIN South M J  
922, xv 87  
Torsions of the omentum C WOUR Zentralbl f  
Chir 92 xlix, 000  
A peculiar case of omental torsion as contribution to  
the origin of abdominal pain F CEN. rix Zentralbl f  
Chir 92 xlix, 1248

## SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles,  
Tendons, Etc.

- Pain due to iliocostal impingement F J GARDNER  
J Bone & Joint Surg 9 2, iv 705  
Disturbances at the epiphyses during adolescence B  
LAWREN Med Klin 9 2, xviii, 90  
The anatomy of the bone marrow A FRYER B t M  
J 922, iv, 79  
Iatrogenic bone marrow studies preliminary report  
Part I Description of marrow trephine and experimental  
studies L M MORRIS and E H FALCONER Arch Int  
Med 922, xxi, 435  
Iatrogenic bone marrow studies Part II Surgery of  
the clacral field L M MORRIS and E H FALCONER  
Arch Int Med 922, xxi, 460  
Infantile rickets: the significance of clinical roentgenophic,  
and chemical examinations in its diagnosis and treatment  
A F HINES and L J UNDER Ann f Dis Child 9  
xxv 377  
Studies on experimental rickets P G SIMPSON J  
Bone & Joint Surgery 9 2, iv 67  
Experimental rickets in rats VII The prevention of  
rickets by sunlight, by the rays of the mercury spot  
lamp, and by the carbon arc lamp A F HINES, L J  
UNDER, and A M PARRINGTON J Exper M 9 2,  
xxvii, 427  
Experimental rickets in rats VIII The effect of the  
roentgen rays A F HINES, L J UNDER, and J M  
STERNER J Exper M 9 xxvii 447  
Studies on selective ultra-violet radiation in the preven-  
tion of experimental rickets A J PARRIN Med Herald,  
9 2, 793  
Bone trophy B BROOKS South M J 19 2, xv, 83  
The roentgen ray diagnosis of tuberculosis of the bones  
and joints A E WALLACE Canadian M Ass J 922  
xi, 798  
Acute osteomyelitis F L HURVE N York M J &  
Med Rec 192 cxi, 445  
Chronic non suppurative osteomyelitis in the adult: its  
primary focal necrosis of the diaphysis A WINKLES UER  
Arch f Klin Chir 9 2, cxi 20 [92]  
Hemorrhagic osteomyelitis G BARRIE J Bone &  
Joint Surg 9 2, iv 655 [92]  
Two cases of bone regeneration after osteomyelitis  
A P DOUGLAS PARKER Proc Roy Soc Med Lond  
922, xv Sect Dis Child 58  
The pathology of osteitis deformans Paget disease  
S M CONE J Bone & Joint Surg 9 2, iv 75  
Central bone tumors and their differential diagnosis  
with special reference to the latent and unhealed bone cysts  
in adults J C BLOOMINGDON Minnesota Med 92  
604  
Primary multiple sarcomata of the bones B MASON  
Polishk Reuss 9 2, xxi, xxi char 473 [93]

- Bone sarcoma: its prevalence in Massachusetts I A  
COWEN Boston M & S J 9 2, clxxvii, 543  
Sarcoma of the long bones R F TOSTERUSO Pacific  
Coast J Microscop 9 xxviii, 32  
Periosteal sarcoma in association with osteomyelitis  
report of three cases R L KROONER Surg Gynee &  
Obst 9 xxiv 440 [93]  
Carcinoma of the bone marrow A PI xv Brit J  
Surg 9 2, v, 35  
The origin of parodontal arthritis LUYER Zentralbl f  
Chir 92 xlix,  
A case of gonorrheal arthritis R O BELGER NO  
Semaine Med 9 2, xxi, 33  
The second great type of chronic arthritis L W EL  
California State J M 9 2, xv 399  
The biology of the formation of joint H ZIEGLER &  
Zentralbl f Chir 9 2, xlix, 000  
The pathology of tuberculosis of the joints study from  
the clinical standpoint M H ROULET J Bone & Joint  
Surg 9 2, 670 [92]  
Developmental malformations in the skeleton following  
juvenile arthritis deformans S ELIASMAN Ztschr f  
Kinderheilk 922, xxxiii, 55  
An unusual case of atypical calcifying fasciitis with  
extensive calcareous intermuscular deposits H LOWRY  
West Pennsylvania M J 922, xvi,  
Acute tendovaginitis G VINCIG Acta chirurg  
Scand 9 2, iv 24  
A muscle anaplasia of the deep musculature of the neck  
(the rhomboides minor muscle) H FRIEDBERG Wien  
Abn Wchenschr 9 2, xxv 269 [92]  
Metastatic melanoma of the scapula F D CARRIS  
Brit J Surg 922, x, 390  
Scapula scapulothorax J H O RAYNS Arden Tztschr  
General 92 lxxv, 65  
The general diagnosis of diseases of the hip not  
due directly to trauma J WINKLER Muenchen med  
Wchenschr 922, lxxvii, 98  
Congenital abscess in the femur of newborn child  
A KALO GyGOLozs, 9 2, 344  
A case of sarcoma of the knee K V MAYNARD  
Indiana M Gaz 92 lxxv, 377  
Demarcation processes in the center of ossification of the  
tuberosity of the tibia W R BRADEN Nony Chir  
Arch 9 2, iv, 3 [94]  
A case of bilateral Schiatter disease in 6-year  
old football player MAYOR Zentralbl f Chir 9  
xli  
The American foot H B LARRY J Michigan Stat  
M Soc 9 2, xii, 43  
The modern treatment of call or flat foot G J  
McKENNARY California Stat J M 9 2, xii, 337  
The question of non-traumatic metatarsal tumors  
C DEUTSCHMAYER Zentralbl f Chir 922, xli,  
975

## Fractures and Dislocations

- The treatment of fractures O C MCKINNEY J Bone & Joint Surg State M Soc 92 Jul 404
- Unusual fractures due to injuries and results of operative treatment in 100 cases A P MITCHELL Brit J Surg 1922, 2, 39 [95]
- The treatment of bilateral luxation of the shoulder H HERRMANN Zentralbl f Chir 1922, 122, 140
- The treatment of fractures near the shoulder elbow and wrist W H HARRIS South M J 19 24 333
- The Davis method of reduction of congenital dislocation of the hip joint W J ALLEN J Bone & Joint Surg 922, 2, 14 805 [96]
- The combined treatment of fractures of the shaft of the femur E L ELLISON Surg Gynec & Obst 9 222, 300
- Fractures below the upper third of the femur with denervation of an apparatus for fixation C S VICKERS Texas State J M 9 2, 270, 295
- The late treatment of fractures of the long bones of the lower extremity J T O'FERRALL New Orleans M J 2 8 J 1922, 122, 94

## Surgery of the Breast, Joints, Muscles, Tendons, Etc.

- Acromioclavicular from the surgical standpoint P A HICKLEY N.Y. Chir. Arch., 922, 2, 83 [95]
- How should cystic deformities be corrected? GAO Arch f orthop Unfall Chir 19 4, 22, 430
- The treatment of acute osteomyelitis C HARTY Deutsche med Wochenschr 1922, 122, 97 [97]
- The treatment of acute osteomyelitis M WOOD Texas State J M 1922, 2, 290
- Some aspects of the treatment of surgical tuberculosis J T WOOD Brit M J, 1922, 2, 146
- Osteomyelitis of osteoclasts? Also discussion of the Springer operatione Gallatier Arch f orthop Unfall Chir 1922, 22, 440 [97]

The surgical treatment of traumatic pseudarthroses. two new methods of operation T A GOLJAVINSKY N.Y. Chir Arch 1922, 2, 5 [97]

Operative measures to mobilize arthrodesis A MORGAN Ann Ital di chir 1922, 1, 243 [98]

The origin and treatment of congenital muscular torticollis J FRANKEL Arch f klin Chir 92, 222, 228 [99]

An operation for the lengthening of bones G HAMILTON Texas State J M 19 2, 270, 295 [99]

Experiments in bone transplantation S M KROVITZ Nederl Maandchr Geneesk 20 1, 2, 684 [99]

A contribution to the study of bone transplantation L MACHON J de chir 922, 22, 260 [99]

A prosthesis for the thumb S ORRILL Acta chirurgica Scand 1922, 1, 23

Inventory into the results of the operative treatment of internal derangement of the knee joint P H ALLEN Chir Arch 1922, 2, 2

Procedures for the improvement of impaired function of the knee joint due to extra articular causes R R FITZ N York State J M 9 2, 270, 295

The treatment of industrial accidents to the knee joint R H BULLINGTON J Am M Ass 9 1222, 207

The treatment of traumatic suppurative arthritis of the knee L. MACHON Zentralbl f Chir 20 2, 222, 120

The application of the wedge principle in the fastening of tibial bridge graft R E LILL Brit J Surg 9 2, 2, 3

Amputations A L LOCKWOOD J Am M Ass 92 1222, 1490

## Orthopedics in General

Progress in the care and education of crippled children in Ohio under the new laws B O CHOLSTET J Am M Ass 1922, 1222, 207

An apparatus for measuring the position of the legs H DRENNAN Fortsch d Med 9 22 409

A favorable result from orthopedic treatment of severe case of Little disease V O PIZZALATO Kansas Med J 9 2, 30

## SURGERY OF THE SPINAL COLUMN AND CORD

- Cervical rib S W BOONSTRITT J Bone & Joint Surgery 922, 2, 683
- Traumatic back injuries and their treatment J W SEVIER N York State J M 1922, 2, 290
- Curvature and operation treatment of idiopathic structural scoliosis A WATSON N York State J M 9 222, 440
- The diagnosis of traumatic fracture of the spinal column and sufficient evidence (Schäfer) C GOSCH Arch f klin Chir 1922, 222, 73 [100]
- The results of treatment of lateral curvature of the spine J A BROOKER Hahnemann Month p 122, 222
- Abstract of clinical lecture on two cases of tuberculosis of the spine A M FORTNA Canadian M Ass J 1922, 22, 733
- The technique of the operative immobilization of the spinal column W W HARRIS Zentralbl f Chir 9 2, 222, 6
- Bony bridging in tuberculosis of the spine R B COFIELD J Am M Ass 1922, 1222, 130
- The costal graft in Pott's disease A G. HARRIS Rev Assoc med argent 9 222, 343
- Reef bone in stabilizing operations of the spine L T KROVITZ J Bone & Joint Surg 922 2, 14 7 [101]

The mechanics of wire plaster shell in the treatment of Pott's disease in children with lateral X-ray control R P SCHWARTZ J Bone & Joint Surg 9 22 730

Paraspinal splitting of the spinal column H VON BASTEN Zisch f orthop Chir 922, 222, 266

The operative splitting of the spondylitic spinal column with celluloid staves P PIZZALATO Zentralbl f Chir 922, 222, 24

Neuropathic arthropathy—Charcot's spine J RICHMOND E J HARRINGTON J Am M Ass 92 1222, 207

Report of two cases of spine bulge occurring at Fort Bragg, Ca H S H. VANCE M.D. Surgeon, 922 2, 4 5

A case of complete section of the dorsal cord by direct contusion an anatomic-pathologic study A BOWEN J Lippincott, and L. CURRIE Rev neural 9 2, 222, 202 [101]

Spinal cord disease report of cases J J ALLEN Kentucky M J 9 22, 503

Some observations on the symptomatology of spinal tumors and compression paraplegia T C STEWART Med Press, 922, 222, 222 [101]

The results of the removal of tumors of the spinal cord A W. AMOS and W O OTT Arch Neurol & Psy 1922, 222, 530 [102]

## SURGERY OF THE NERVOUS SYSTEM

- Peripheral nerve injuries associated with fractures  
D Lewis and E M Alpers *Ann Surg* 9 2, 1935, 1103  
Experimental results of cable grafts and tubes of leucine  
in the repair of peripheral nerve defects W O Orr  
*Minnesota Med* 92, 7, 58 [1945]  
Transposition of the ulnar nerve P Jaconet *Rev*  
*Assoc med argent* 1932, XXXV 377  
On the solitary fibromyxomata of peripheral nerve  
trunks, with a description of case of cystic fibromyxoma

- of the median nerve E A Livell *Brit J Surg* 9  
2, 202 [1951]  
Sarcoma of the median nerve E R McGrouther and J L  
Buxton *Surg Gyner & Obst* 922, XXXV 453 [1951]  
The surgical treatment of peripheral palsy of the facial  
nerve J Jairo Spizahl, 92 XII, 55  
The surgery of the sympathetic nerve V Gomory  
Spizahl, 92 XII, 54 [1951]  
Tuberculous disease cured by spinal nerve section  
case report L W Frank *Kentucky M J* 922 XX, 703

## MISCELLANEOUS

Clinical Entities—General Physiological  
Conditions

- Chronic multiple myeloma W J Mayo *Ann Surg*  
1932, LXVI, 43  
Semi-diurnal variation in the acidity of different por-  
tions of the gastric contents T W Weller *J Am M*  
*Ass* 92, 1935, 1409  
Primary spontaneous tumors in the kidney and adrenal  
of mice studies on the incidence and inheritability of  
spontaneous tumors in mice M Levy, H F Housar, and  
H G Hella *J Cancer Research*, 9 1, 4, 305  
The spontaneous occurrence of tumors in the thyroid,  
stomach, and breast M Bailin and R C Mowbray *J*  
*Am M Ass* 9 2, 1935, 34  
Teratomata and their relation to age H E Horvath  
*J Cancer Research*, 92 VI, 26  
Observations on cystic subcutaneous tumors and the  
growth of subcutaneous tumors in general E Horvath  
*Bull path Anat u allg Path* 922, LX, 75 [1945]  
The tissue reaction in malignant epitheliomata of the  
skin its value in diagnosis and in prognosis H J Park  
*Surg Arch Dermat & Syph* 9 VI, 40  
Precancerous dermatoses W J Hirsch *N York*  
*M J & Med Rec* 9 2, 1935, 167  
Modern views of cancer H C Saltzstein *J Michigan*  
*Stat M Soc* 922 XII, 479  
Cancer from the viewpoint of the pathologist H H  
Flaxman *J South Carolina M Ass* 29, XVII, 307  
Is cancer biological phenomenon? Some heretic  
thoughts on cancer J G Gaudy *J Cancer Research*,  
92 VI, 357  
What the family physician should know about cancer  
C J Broder *N York M J & Med Rec* 9 2, 1935,  
397  
A study of the drugstore of cancer by means of serum  
reactions J A SM MacKinnon *Lancet*, 9 2, 1935,  
739 [1945]  
The relation of molecular activity to carcinoma pre-  
liminary report J A Strydom and A W Darnstrom  
*J Cancer Research*, 92 304  
Cancer and paracetamol L Brown *J Cancer Research*,  
92, I, 57  
The detection of malignant cells in body fluids P N  
Wron *Lancet*, 9 2, 1935, 76  
The estimation of the quality of carcinomas material  
O Fawcett *Zentralbl f Gynak* 9 2, XII, 300  
The relation of fibrosis and involution to longevity  
in cancer W C MacCarty *J Lab & Clin Med* 922,  
VI, 4

- The influence upon the growth of transplanted Thymus  
Joking at carcinomas of hydrogen ions and of various  
salts in different concentrations K Sotomura, H M  
Noyes, and K G Fala *J Cancer Research*, 9 VI  
285  
Regarding the natural or spontaneous cure of carcinoma  
D B Royce *Ann Ital di chir* 9 2, 48  
Postoperative complications and their treatment  
T A Swallow *Therap Gaz* 9 XI, 603  
Bone formation in operative round osteomas W M  
Jones *Ann Surg* 92 LXVI, 549  
The treatment of secondarily infected varicose ulcer  
of the leg with consideration of the biologic behavior  
of the bacteria F Hahn *Therap d Gegenw* 9 LXVI,  
26

## Sera, Vaccines, and Ferments

- The galvanic excitability of motor nerves following  
parental injection of heterogenous serum O M Chiriac  
and E Garmy *Deutsche Zisch f Chir* 922, CLXXI,  
263 [1945]  
Indications for vaccine therapy in acute infections  
Wassermann *Am J Clin Med*, 9 XVII, 79  
The action of vaccines J Pratt *Journal Lancet*,  
922 CLXX, 75  
Vaccinotherapy in surgery DE VLOO *Vlaamsch*  
*genezk Tijdsch* 9 2, 18, 34  
Morphological vaccinotherapy V Sowerby *Ann Ital*  
*di chir* 9 2, 1, 530  
Autogenous vaccine in postperal fever J Vetsch  
*Brit M J*, 922, II, 644  
Vaccinotherapy for cancer F Danks *Vlaamsch genezk*  
*Tijdsch* 9 18, 358

## Blood

- The normal hemoglobin standard R L Haddy *J Am*  
*M Ass* 922, 1935, 1406  
The blood count improvements in method A C AL-  
FORT *Lancet*, 9 CLXX, 750  
The effect of water and cold weather on the blood  
catalase W E Burke and J M Lachner *Am J Lab*  
*& Clin Med* 922, IX, 33  
The growth promoting function of leucocytes A Car-  
roll *J Exper M*, 922, XXXVI, 285  
Specific precipitin reaction of leucocytes L Hektory  
and F R Slatyer *J Am M Ass*, 1932, LXIII, 326  
The clinical significance of total and differential leu-  
cocyte counts, with special reference to acute infections  
W C Jones and C E Knowlton *Am J M Sc* 922,  
CLXX 333

Retactions—increased percentage of reticulated erythrocytes in the peripheral blood. I. M. KATZMAN *et al.* *J. Lab. & Clin. Med.* 9, 2, viii, 1.

A study of the erythrocyte curve at various ages and its relationship to the hemoglobin curve. L. H. M. FINE. *Arch. Int. Med.* 191, xix, 478.

The lymphocyte and the Tuerck cell: their histologic relationship and clinical significance. J. C. R. FERRIS and C. V. PRADON. *Lancet*, 1912, cccc, 909.

The quantitative determination of glucose and lactose in blood and urine. Preliminary report. W. T. LAMARCA and M. C. PERRY. *J. Am. M. Ass.* 9, ixix, 306.

The electrolyte of whole blood: the acid base of the blood in renal disease. J. B. RICHARD and H. J. FARR. *Arch. Int. Med.* 9, xix, 57.

The diameters of the red cells in pernicious anemia and in scurvy following hemorrhage. C. PRICE JOSE. *J. Path. & Bacteriol.* 9, xiv, 487.

The treatment of certain cases of pernicious anemia with protein and the pathogenesis of the condition. A. F. STEPHENS and PAR. 9, xix, 375.

The amount of blood to be transfused in anemia of children (blood storage). T. H. CLARK. *Am. J. The Child* 19, xiv, 199.

Hemolysis following transfusion. P. A. WATSON. *J. Am. M. Ass.* 19, ixix, 5.

A simple procedure for testing the circulation (somatone) in gangrene of the extremities. A. COSGROVE. *Brit. Med. J.* 21, 344. [1917]

### Blood and Lymph Vessels

The causes and cure of arterial hypertension. J. O. CURRY. *J. Lancet* 191, xix, 309.

The pathogenesis of true transposition of the arteries: the basis of the heart. P. HENRI. *Bull. et Mem. Soc. Med. de Par.* 91, xix, 904.

The coronary circulation of the heart. S. D. MOOREHEAD. *Progr. Med.* 1, 10, 9. [1917]

A contribution to blood vessel surgery. L. R. FARRAR. *Internat. J. Surg.* 9, 2, xix, 314.

A surgical study of arterial decalcification. C. L. CALLAHAN. *California State M. J.* 16, 1, xi, 544.

A case of arteriosclerosis calcilobus of the iliac artery followed by complete and definite recovery. L. SAWYER and P. BROWN. *Bull. Acad. de Med. Par.* 9, ixix, 84. [1917]

Rupture of the basilar artery complicating bacterial embolism of the left iliac. For. VETZ and LEONAR. *Bull. et Mem. Soc. Med. de Par.* 191, xix, 3.

A case of aneurysm of the aorta with unusual pressure signs. W. S. MURPHY. *Progr. Med.* 1, 10, 11, xix, 180.

Triple aneurysm of the aorta. L. RICE. *Texas State M. J.* 9, 2, xix, 17.

Ligation of the aorta. G. T. V. CHA. *Ann. Surg.* 19, 4, xix, 379.

Anomalous of the subclavian segment of the inferior vena cava. P. WINTER. *Bull. et Mem. Soc. Med. de Par.* 9, 2, xix, 516.

Ligation of the internal iliac artery. W. D. HUNTER. *Ann. Surg.* 19, 4, xix, 520.

Subcutaneous rupture of the popliteal artery: death from shock. I. ALVARO. *Rev. Med. & Quim.* 9, 2, xix, 10.

Ligation of the femoral artery in the middle of the thigh. J. M. DOWD. *J. Am. M. Ass.* 9, ixix, 245.

Cases of dilatation of the internal lymphatic glands. L. ALVARO. *Bull. et Mem. Soc. Med. de Par.* 191, xix, 244.

Report of a case of spontaneous gangrene simulating purpura due to acute thrombosis. D. W. KRAMER. *N. York M. J. & Med. Rev.* 1912, cccc, 304.

Some observations on blood sugar and the alleged glycosuria following surgical procedures on the thoracic duct. C. S. WILLIAMSON. *J. Lab. & Clin. Med.* 9, 2, 9.

### Surgical Diagnosis, Pathology and Therapeutics

Diagnosis on basal metabolism. I. P. LATHAM. *B. C. M. J.* 9, 2, 747.

Basal metabolism in medical practice. U. G. DALLER. *J. Nat. M. Ass.* 1912, xiv, 234.

The Wassermann reaction from the clinician's point of view. C. J. BRONN. *Cincinnati M. J.* 191, xix, 206.

The Wassermann reaction in non syphilitic cases. T. M. DOWD. *Am. J. M. Sc.* 9, 2, cccc, 314.

A further note upon comparison of the Sachs-Gord and H. Wassermann reactions in the serological diagnosis of syphilis. R. A. KRAMER. *Am. J. M. Sc.* 19, cccc, 53.

The influence of posture on physical signs in the chest. J. H. CROFT. *South M. J.* 9, 2, xiv, 377.

New methods of studying gastric peristalsis. W. C. M. AUST. *J. Am. M. Ass.* 1912, ixix, 5.

Hydrochloric acid in gastro-intestinal pathology. J. C. JOHNSON. *South M. J.* 9, 2, xi, 399.

A chemical study of pharyngeal abscess with special bearing on the diagnosis of acute submandibular abscess. Z. COPE. *Brit. J. Surg.* 19, 2, 2, 93.

A plea for the more cautious use of lumbar puncture. S. A. GILSON. *Indiana M. J.* 19, 19, 377.

### Experimental Surgery and Surgical Anesthesia

Painless and apnea tracheotomy. I. LARSEN. *Acta. Gyne. & Obst.* 19, xix, 405. [1917]

Studies on gastric and duodenal secretions: the relation of epinephrine to gastric secretions—A chemical and experimental study. J. ALPERT and A. C. IVEY. *J. Lab. & Clin. Med.* 19, xix, 37. [1918]

### Röntgenology and Radiant Therapy

Physiotherapy and radiology. H. B. GOSWELL. *Med. Herald*, 9, 2, xix, 207.

Radiology its use and abuse. R. A. MORRIS. *Lancet*, 1912, cccc, 748.

The dangers and limitations of the X rays and radium. C. F. HENNING. *Colorado Med.* 9, xix, 306.

Radiology in the teaching of anatomy. J. M. W. ALGER. *Brit. M. J.* 1912, 795.

Portocaval radiography. J. A. HOFFER. *Boston M. J.* 8, 5, 1912, cccc, 545.

The effects of the X rays and radium on the blood and general health of radiologists. G. E. PRINGLE. *Am. J. Roentgenol.* 9, 2, ix, 617.

Universal covers showing the diagnostic value of the X ray. J. J. WILLIAMS. *New Orleans M. J.* 2, 3, 924. 1917.

Movements based upon the sensitive craniation of 90 normal children. E. SCHULTZ. *California State M. J.* 9, 2, xi, 23.

Röntgen ray radiography. J. J. PERRY. *J. Radiol.* 19, 4, xi, 48.

Some procedures found helpful in making dental roentgenograms. J. A. HILL. *Internat. J. Orthodont. Oral Surg. & Radiography* 1912, vi, 66.

The roentgen ray diagnosis of subcutaneous cervical lymph glands. J. M. HANFORD. *Am. J. M. Sc.* 19, cccc, 339.

The X-ray findings in the temporal bone with tumors  
S. A. Fortsch. d. Geb. d. Röntgenstrahlen, 9  
1935, 495

Experimental roentgenoscopy in anatomic-surgical  
studies of the vascular system. L. M. TERRY. Westn. Chir.  
p. 2, 1, 85

Roentgen studies of the thoraces of the stillborn and  
newborn. W. A. E. vs. Am. J. Roentgenol. 9  
1935, 63

The normal infant's chest: preliminary report on the  
X-ray examination of the chests of healthy infants. J. H.  
P. P. ROY and A. ROWLAND. Lancet, 9, 1935, 80  
A plea for closer relations between the cardiologist and  
roentgenologist: modification of cardiac measurements,  
with simple technique for localization of the heart  
apex by means of the cardiograph. P. RAMON CASTELLAS  
J. Am. M. Ass. 9, 1935, 406

Mutation of pulmonary shadow: does it the type of  
breathing? H. A. B. Am. J. Roentgenol. 9, 2,  
1935, 68

Serial roentgenographic observations of chronic pul-  
monary tuberculosis. J. B. A. Am. J. Roent-  
genol. 9, 2, 1935, 69

Bone disease, osteoporosis or hypoplasia from fixation and  
non-use. J. C. R. Radiol. 9, 1935, 43  
Osteitis deformans (Paget disease). C. M. JACK. Am.  
J. Roentgenol. 9, 2, 1935, 66

Osgood-Schlatter disease. E. R. BADER. Am. J. Roent-  
genol. 9, 2, 1935, 65

The roentgenological study of the pathologic gall blad-  
der. B. R. K. Am. J. Roentgenol. 9, 2,  
1935, 71

A simplified pneumoperitoneum technique. L. R. S. vs.  
Am. J. Roentgenol. 9, 2, 1935, 68

The roentgenologic and the endologist in the diagnosis of  
renal disease. F. G. C. vs. Am. J. Roentgenol. 9,  
1935, 65

Roentgenography in thoracic tuberculosis, with special  
consideration of the so-called Staenke symptoms. P. F.  
M. vs. Am. J. Roentgenol. 9, 2, 1935, 65

The osteoblastic tract. J. S. vs. Radiol.  
9, 2, 1935, 43

The macrothoracic joint in the roentgenogram. Report I.  
The age and variations of the macrothoracic joint and  
the macrothoracic joint in the roentgenogram. P. H. vs. Arch.  
orthop. U. S. A. 9, 2, 1935, 576

The results of the four point procedure with the use of  
the Meissel sliding gaster. Z. vs. Chir. 9, 2, 1935, 46

The treatment of X-ray and radium treatment. P.  
vs. Arch. Derm. & Syph. 9, 2, 1935, 379

The value of the X-ray in skin diseases. M. V. vs. J. Am.  
Med. Ass. 9, 2, 1935, 379

Treatment of cancer of the lip by radiation. F. K. vs.  
Arch. Derm. & Syph. 9, 2, 1935, 379

Cancer of the lip treated by electrocoagulation and  
radiation. G. L. vs. Arch. Derm. & Syph. 9,  
1935, 379

The roentgen treatment of adenopathies. M. K.  
vs. Arch. Derm. & Syph. 9, 2, 1935, 379

The relation of metastases to the primary tumor in  
roentgenotherapy. W. B. vs. Fortsch. d. Geb. d.  
Röntgenstrahlen, 9, 1935, 490

Abdominal thyroid palpation in the treatment of  
the in disease of hyperthyroidism. M. vs. Arch. Derm. & Syph. 9,  
1935, 379

Thyroid, spasm and painful abdominal cases treated by  
high frequency thermopneumatization. N. vs. Arch. Derm. & Syph. 9,  
1935, 379

The technique and statistics of the treatment of car-  
cinoma of the uterus and contiguous organs: with the com-  
bined use of radium and the X-ray. H. vs. Am. J.  
Roentgenol. 9, 2, 1935, 66

The action of the constant galvanic current on tumors in  
health and disease. C. M. vs. Arch. Derm. & Syph. 9,  
1935, 379

Physical principles underlying the development of high-  
voltage roentgen ray apparatus. C. N. vs. Arch.  
Derm. & Syph. 9, 2, 1935, 455

The physiological and therapeutic action of high-  
frequency currents. R. vs. Arch. Derm. & Syph. 9,  
1935, 455

I testis: deep roentgen irradiation: study of the  
immediate effects. J. H. vs. Am. J. Roentgenol. 9,  
1935, 68

The physical basis of deep roentgen therapy. F. vs. Cal-  
ifornia State M. J. 9, 2, 1935, 350

The action of the constant current with special reference  
to its action on the subcutaneous tissues. W. J. vs. Arch.  
Derm. & Syph. 9, 2, 1935, 455

Conforming the climatic results of intensive deep roent-  
gen therapy. J. H. vs. California State M. J. 9,  
1935, 354

Cancer—its character and causes. L. vs. Radiol.  
9, 2, 1935, 407

The ray treatment of cancer. J. T. vs. N. York  
M. J. & Med. Rec. 9, 2, 1935, 386

Experimental research regarding the genesis of the  
hemodysplastic crisis in cutaneous irradiation. M. G. vs.  
G. vs. L. vs. P. vs. Am. J. Roentgenol. 9, 2, 1935, 68

The late reaction following roentgen irradiation. F. M.  
vs. Zentr. f. Gyn. 9, 2, 1935, 35

Protection to the operator from unnecessary radium  
radiation. S. vs. Am. J. Roentgenol. 9, 2, 1935, 68

Radium therapy. W. H. B. vs. Canadian M. Ass.  
J. 9, 2, 1935, 730

The effect of the size of radium applicators on skin  
doses. E. H. vs. Am. J. Roentgenol. 9, 2, 1935, 67

Carcinoma of the tongue and its treatment with radium.  
L. vs. Arch. Derm. & Syph. 9, 2, 1935, 379

Cancer of the larynx treated by radium. D. vs. Arch. Derm. & Syph. 9, 2, 1935, 379

Carcinoma of the larynx treated locally with radium  
emulsions: clinical report. G. T. vs. Am. M. Ass. 9, 2, 1935, 60

Radium as curative agent for tuberculous glands. E.  
S. vs. Lancet 9, 2, 1935, 804

Technique and statistics in the treatment of carcinoma  
of the bladder by radium. B. S. vs. Am. J. Roentgenol. 9, 2, 1935, 68

The treatment of benign conditions of the pelvis with  
radium. L. J. vs. Am. J. Roentgenol. 9, 2, 1935, 68

The results of treatment of carcinoma of the cervix, with  
statistical and technique. C. F. vs. Am. J. Roentgenol. 9, 2, 1935, 65

Carcinoma of the uterus with pregnancy intervening  
treated successfully by radium followed by the delivery  
of normal child. C. L. vs. Am. J. Roentgenol. 9, 2, 1935, 67

The experiences of 61 years in the irradiation treatment  
of carcinoma of the uterus. S. vs. Zentr. f. Gyn. 9,  
1935, 35

Industrial medicine and the general practitioner. G. G.  
vs. California State M. J. 9, 2, 1935, 356

Medical aspect of the Workmen's Compensation Law  
H D BAY Med Times, 9 2 L 60  
The acute painful back among industrial employees  
allergic compensation injury H R COV J Am M Ass  
9 4, 1937

### Hospitals; Medical Education and History

The influence of hospital standardization upon preven-  
tive medicine C D CLAY Ohio Res M J 93  
eval, 754

Forty years of surgery 1867-1907 W W LUT  
Boston M & S J 9 1 eval, 39

### Legal Medicine

I should as be father's liability for operation Cleveland Med Jo (Ark) 30 5 W R p 370  
Surgery not liable for gross abuse in absence of hysterical patient Parry vs Carter (W Va) 83 N W R p 68  
Malpractice provable without expert testimony Cor-  
ell Rexber et al (Wash) 303 Pac R p 1096

## GYNECOLOGY

### Uterus

Clinical aspects of uterine dactylitis V F MILLER Am  
J Obst & Gynec 10 2, iv 305

Uterine duplex incision V WARDLOW and W P  
SMITH Surg Gynec & Obst 101 xxiv 407

The surgical aspect of uterine malposition J A  
PERRY Boston M J 9 2, ibid, 38

Actomyomycosis of the female genitalia, especially the  
uterus L. HOFFER Monatschr f Geburtsh Gynaek  
10 1, 1937, 107

The interpretation and management of certain types of  
uterine hemorrhage J D LEECH Kentucky M J 9  
11, 7

Hemorrhage of the uterus induced with drugs L P  
RAY med de la biomed Res 1937, ibid, 340

Chronic endometriosis and its treatment J W B AND  
LEWIS, 1937, com, 794

A method for the removal of large uterine polyp W  
NITZL J Therap (wz) 93 xlv, 604

Parao-dactylitis fibromatosa uterini ovariorum (an  
subperitoneal fibrosis) M CLARK Bull et infir Soc  
nat de Par, 10 2, 1937, 375

A study of benign uterine fibroids, including the  
anatomical relations of large uterine myomas J W  
WILLIAMS Bull Johns Hopkins Hosp 10 2, 1937, 350

Observations on myomas and uterine fibroids  
Zentralbl f Gynaek 9 2, 1937, 275 [114]

Remarks on the scope and technique of myomectomy  
V BONNEY Lancet, 1937, com, 745 [115]

Indications and results of myomectomy for uterine  
fibroids A E GILES Med Press, 9 2, 1937, 330

The evolution of hysteromyomectomy H DE ORT  
Gynec et obst 1937, iv, 160 [116]

Carcinoma of the cervix B C GABRIEL New Orleans  
M & S J 93, 1937, 45

A note on inoperable carcinoma cervix treated with  
colloidal copper and colloidal manganese S B BAYTON  
Lancet, 19 1937, 361

Vaginal involvement in cancer of the cervix A LUTCH  
Brit M J 9 2, 1937, 634

Carcinoma of the cervix following gonorrhea in young  
women S G LEECH Proc Roy Soc Med Lond 9  
xx, Sect Obst & Gynec 83

The treatment of carcinoma of the cervix B V  
CLARK J Indiana M Ass 92 xv 339

Prophylaxis and the treatment of cancer of the uterus  
C A CARRARO Ray Assoc med Argent 93, xxiv 395

Cancer of the cervical stump metastases in the ventral  
form appendix R T F W Surg Gynec and Obst  
9 2, 1937, 334 [117]

### Adnexal and Peri Uterine Conditions

Fibromas of the broad ligament G GROCCARDI  
and M LUCAS RCH, Special, 10 2, 1937, 30

Tuberculosis of the ovary G LOBY Bull et infir Soc nat  
de Par 9 2, 1937, 35

Fachometriosis and endometriomyosis of the ovary  
W B D L J Obv and Gynec Brit J rep 10 1937  
44 [117]

The treatment of salpingo-oophoritis J CAMPBELL  
Brit M J 9 2, 1937, 691

The clinical results of ovarian grafting F DE DITZ  
Gynec et obst 9 2, 1937, 26 [117]

Dissection of converted ovaries after hysterectomy  
in the rat an experimental study I KORN Am J  
Obst & Gynec 9 2, 1937, 408

Clinical and embryological report of an ectomorph, early  
fetal pregnancy together with study of decidual re-  
action, intra uterine and ectopic H A V DOMICAN  
Am J Obst & Gynec 93 iv 57 [117]

Report of case of fall term abdominal pregnancy  
R A BARNSTON Am J Obst & Gynec 93 1937, 344

Observations upon the pathology and treatment of  
hydrometra in the rat A SUTHERLY Am Obst & Gynec  
9 2 iv 346

### External Genitalia

The relation of the ureters to the vagina J C BRADY  
Brit M J 10 1937, 700

Vaginitis due to trichomonas vaginalis H F KANE  
Virginia M Month 92 xlv 302

Prognosis of the female urethra and ovaries of the  
external rectal orifice R R SMITH Am J Nat &  
Gynec 9 2 iv 305 [118]

### Vulvovaginitis

The most common types of vulvovaginitis and their  
treatment I PRONIN M J Med 9 1937, 599, 600, 601, 602

Pelvic pathology and the cardiovascular system W F  
DUNNALL Virginia M Month 92 xlv 195

The non-operative treatment of pelvic inflammatory  
disease I B BLOCH and H M MICKELSON Proc Am  
Assoc M J 1937, xxv 5

Primary sterility A J ROWLEY N York M J & Med  
Rec 1937, xlv 430

The treatment of gynecological conditions by the X ray  
and radium R KNOX Brit M J 10 2, 1937, 678

Clinical mistakes in gynecological diagnosis R I  
S 1937, California Med J 4 9 22 334

## OBSTETRICS

## Pregnancy and Its Complications

- Placental glycogens in the diagnosis of pregnancy  
M W HOLLINGSWORTH *California State J M* 9 22  
344  
Widal's leucopenia during pregnancy I S MAZZA  
Dorchester Rev Assoc med argent 9 2, xxv 39  
Epidemic encephalitis and pregnancy M SAMOVICI  
Rev med d Rosario 9 22, 99  
Fever during pregnancy L H MOORE *Zentralbl f*  
*Gynak* 9 22, 957 [119]  
Second rupture of the uterus complicating pregnancy  
F B YOUNG *Nebraska Stat M J* 9 22, 35  
The extent of the renal lesion in the toxemias of preg-  
nancy A B SPALDING, M C SNEYD and T ALLEN  
*Am J Obst & Gynec* 9 22, 392  
T version of lat pregnancy O M O STAFFORD *New*  
*Orleans M & S J* 9 2, xxv 71  
The treatment of eclampsia T W EDEY *Brit M J*  
9 22, 675  
The results of the treatment of eclampsia by the Dublin  
method B SOLOMONS *J Obst & Gynec Brit Emp*  
9 2, xxiv, 46 [119]  
The care of the breast during pregnancy and the  
puerperium A C BRICK *Med Times, Eng* 9 2, 1905  
Abortions and cauterizations W G SYMONS *Missouri*  
*Med J* 9 22, 506  
Uterine septa duplex in full term twin pregnancy  
C J KIRKIN *Surg Gynec & Obst* 9 2, xxv 443

## Labor and Its Complications

- The method Mowbray *Am J Clin Med* 9 2, 20  
196  
The past present and future of midwifery D P  
W MOORE *Brit M J* 9 2, 4, 7  
Anesthetics and anæsthetics in labor W O GREEN *Conn*  
*Med J* 9 22, 667  
The standard dosage method of using scopalamine-  
morphine N HOSKINS *Brit M J* 9 22, 669  
The maintenance of obstetrical anesthesia by intravene-  
lous and chloroform A J MARTIN *Brit M J* 9  
22, 67  
Concurrent labor induction H BRIDGES *Proc Roy*  
*Soc Med Lond* 9 22, Sect Obst & Gynec 24  
Dystocia due to supine female foetus F L MOON  
*Brit M J* 9 22, 643  
A record of the face and brow presentations at the  
Fremont Hospital B H BUNTON and S C  
WILSON *Rhode Island M J* 9 22, 125

- Home management of occipito posterior position C V  
RICK *J Oklahoma State M Ass* 9 22, xv 304  
A case of breech presentation P S N MINNA *Indian*  
*M Gas* 9 2, h 379  
The management of breech cases of labor J R ALLAN  
*Virginia M Month* 9 2, xiv, 43  
The care of the perineum during labor or placental  
episiotomy R RIX *Nebraska State M J* 9 2, vii,  
354  
Immediate repair of lacerations versus delay A N.  
PICKETT *Kentucky M J* 9 22, 590 [119]  
The indications for cesarean section C E D ALCI  
*Med J Australia* 9 22, 3  
Labor obstructed by solid carcinomatous tumor of the  
left uterine cervix hysterectomy with removal of the  
tumor S G LUKER *Proc Roy Soc Med Lond* 9  
22, Sect Obst & Gynec 8  
Cesarean section—obstruction of the vagina M A  
T RZ *Canad Med J* 9 22, 12, 284  
The uterus after cesarean section E P DAVIS *Am*  
*J Obst & Gynec* 9 22, vi 235 [120]

## Puerperium and Its Complications

- A case of acute dilatation of the stomach following  
labor B P FORD *J Alachab abdominal gynecol*  
9 22, 61  
Retroversions of the uterus following delivery F W  
LYNN *Am J Obst & Gynec* 9 22, 76 [120]  
The treatment of puerperal fever J T ALLEN  
*South M J* 9 22, 829

## Newborn

- The diagnosis and treatment of intracranial hemorrhage  
in the newborn report of fourteen treated cases D  
MORNO and R S ELLIS *Am J Dis Child* 9 2, xiv,  
71 [120]  
Jaundice in the newborn H ROBERTSON *Canadian*  
*Pract* 9 22, 447

## Miscellaneous

- The value of the pathological laboratory to obstetrics  
C V ANDERSON *Habermans Month* 9 22, lvi, 606  
An analysis of 3,000 cases of obstetrics S P FORD  
*Canadian Pract* 9 22, xiv, 443  
The influence of the placenta on the mammary gland  
C M SYMONS *Am J Obst & Gynec* 9 22, 4, 3  
[121]

## GENITO-URINARY SURGERY

## Adren, Kidney and Ureter

- A case of tumor of the suprarenal cortex H C  
GILSON *Proc Roy Soc Med Lond* 9 22, Sect  
*Dis Child* 30  
Report of case of ectopic kidney R C B  
*Virginia M Month* 9 22, xiv, 303  
Hemorrhage in the I S JONES, W F BRADACK, and  
A J SCHULTZ *J Am M Ass* 9 22, 40  
The renal factor in diabetes mellitus L H FRYER  
*J Missouri M Ass* 9 22, 43

- The estimation of urea, non protein nitrogen, and  
creatinine as an index of renal function W A FROST and  
J T GRANGER *J Am M Ass* 9 22, 383  
The comparative values of the sodium-carbamide and blood  
biochemical tests in the estimation of kidney function B  
A THOMAS *J Am M Ass* 9 22, 387  
Partial activity of the kidney and the all or nothing  
principle A R KHAZAN *J Path & Bacteriol* 9 22,  
xiv, 44  
Certain renal stenosis and their interpretation W B  
COKER *Lancet* 9 22, cccii, 861





## SURGERY OF THE EYE AND EAR

## Eye

Myopia in occupational diseases D J  
L. L. and C. P. McCann N. non Health, 9 11  
6

Some ophthalmological manifestations of disease of the  
nervous system J P. LERAT J Am M Ass 9 2, 1897,

Optic neuritis of nasal origin recovery after operation  
E. T. SMITH Med J Australia 9 2, 11, 45

Epidemic encephalitis from the standpoint of the  
ophthalmologist G F. LEBRY Am J Ophth 9  
785

The examination of the eye by direct sunlight E. JACK  
Nov J Am M Ass 9 1897, 6

Extraordinary development of the tactile and olfactory  
sense compensatory for loss of sight and hearing with  
demonstration of the remarkable case of Willetta Higgins

T. J. WILLIAMS J Am M Ass 9 1897, 33  
Microscopic study of the living eye E. ARONOWITZ  
Rev Assoc med argent 9 1897, 365

Accident eye injuries case report S. G. DAVEN  
Kentucky M J 9 1897, 69

Injuries of the visual tracts of the brain H. WIEDE  
MANN Ztsch f ophth u. Verwundung 9 437  
[125]

A case of pulsating exophthalmos R. A. FENYO Am  
J Ophth 9 2, 803

The fate of an intra-ocular foreign body H. S. GRADLE  
Mil Surgeon, 9 2, 14

The treatment of concomitant squint with especial re  
ference to training of the fusional sense H. M. LARSON  
Pennsylvania M J 9 1897, 7

The present-day status of squint surgery new opera  
tive techniques O. WILKINSON J Am M Ass 9 2,  
1897, 14 7 [125]

Symmetrical swellings in the neighborhood of the upper  
lid near the outer canthus of each eye P. G. DODGE  
Proc Roy Soc Med Lond 9 1897, Sect Ophth 33

Trachoma and our end results J. H. BURLINGAME Am J  
Ophth 9 2, 3 700

Report of trachoma clinic conducted at Pelham  
Mitchell County Georgia J. McILVAINE J Med Ass  
Georgia 9 11, 468

The changes in the para ocular glands which follow the  
administration of diets low in fat soluble A with notes of  
the effect of the same diets on the salivary glands and the  
mucosa of the larynx and trachea S. MOUR Bull Johns  
Hopkins Hosp 9 2, 1897, 357

Dacryocystitis etiology pathology treatment, medical  
and surgical C. S. MICHAM Ohio State M J 9 2, 1897,  
63

The importance of careful study of the etiology in  
inflammatory conditions of the eye W. H. CARPENTER  
J Med Ass Georgia 9 2, 11, 400

The pros and cons of foreign protein injections in affec  
tions of the eye J. M. PATTON J Iowa State M Soc  
9 2, 1897, 357

Vernal conjunctivitis B. H. MINCHER J Med Ass  
Georgia, 9 2, 11, 407

Points in the diagnosis of syphilis of the eye L. H.  
LAVER Med Herald 9 2, 1897, 383

Sympathetic iridocyclitis D. F. HARRINGTON And J  
Ophth 9 2, 70

A case of rhinococcal infection of the eyeball J. S.  
EVANS Indian M Gaz 9 2, 11, 376

Intra ocular cysticercus D. J. WOOD Brit J Ophth  
9 2, 1897, 450 [126]

Bilateral blood staining of the cornea H. S. GRADLE  
Illness M J 9 2, 1897, 38 [126]

Oxys of long duration D. J. WOOD Brit J Ophth  
9 2, 1897, 458 [126]

The early development of the corneal tubercle, study  
in slit lamp microscopy B. T. HANSEN and F. H.  
HANSEN Arch Ophth 9 2, 1897, 53 [126]

Neuropathic keratitis the result of focal infection J. W.  
CHARLES Am J Ophth 9 2, 1897, 703 [127]

Changes in refraction H. FREIDENWALD Am J  
Ophth 9 2, 1897, 803

Muscular cylinders in refraction J. D. HESTON J Am M  
Ass 9 2, 1897, 475

Embryonic fibrovascular sheath of the crystalline lens  
E. J. LEE and M. B. LYON Am J Ophth 9 2, 1897,  
706 [127]

A case of cataracts electrically examined with Gallstrand  
slit lamp H. G. A. GJESVING Brit J Ophth 9 2, 1897,  
447

Tonometry H. G. A. GJESVING Brit J Ophth 9 2,  
1897, 45

A mass partly obscuring the optic disk J. F. CONNOR  
Proc Roy Soc Med Lond 9 1897, Sect Ophth  
33

The blind spot H. S. GRADLE J Michigan State M  
Soc 9 2, 1897, 435

Central scotomas with pyorrhea A. G. HOYT Am J  
Ophth 9 2, 1897, 804

How to know the blood pressure in the vessels of the  
retina A. P. MACINTOSH Am J Ophth 9 2, 1897, 777

Central scotoma with recovery of normal vision W. H.  
LUDWIG and J. T. HANSEN J Am M Ass 9 2, 1897,  
143

Retinal detachment at the macula H. R. JENNEY Proc  
Roy Soc Med Lond 9 2, 1897, Sect Ophth 34

Glaucoma, its etiology and treatment F. J. MCCARTY  
Rhode Island M J 9 2, 1897, 303 [127]

Some interesting eye cases S. K. GAWVITY Indian  
M Gaz 9 2, 1897, 380

## Ear

The correction of prominent ears E. ERBER Med  
klin 9 2, 1897, 7 [127]

The ear, nose and throat man and the dentist W. T.  
PARSON Dental Cosmos, 9 2, 1897, 974

Surgical dissection applied to otology SAMUEL  
SERRA Med 9 2, 1897, 46

Logosmia in relation to the deaf E. AUGERIN Nation  
Health, 9 2, 1897, 577

The mechanism of hearing W. M. BRYAN Brit M J  
9 2, 1897, 785

Deaf ears in children H. HAYS Med Times, 9 2, 1897,  
463

Significant results obtained in treating catarrhal deaf  
ness P. V. WINDLOW N York M J & Med Rec 9  
1897, 466

Report of two cases of head injury with abnormal  
otoneurological findings M. J. GOTTILUS Laryngoscope  
9 2, 1897, 785

Ear, nose, and throat complications of influenza G. S.  
HART Practitioner, 9 2, 1897, 398

The treatment of nasal syphilis in adults W. STUART LOW  
Practitioner 9 2, 1897, 390



MARCH, 1923

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## CONTENTS

I	Index of Abstracts of Current Literature	hi
II	Authors	vn
III	Collective Review	145 161
IV	Abstracts of Current Literature	162 201
V	Bibliography of Current Literature	202 216

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# CONTENTS—MARCH, 1923

## COLLECTIVE REVIEW

EMPTEMA J S Schickel, M.D. Chicago

145

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

CULLIN, T. S. The Use of Sutures as Tractors in the Vaginal Operation for Prolapse 56

NEALEY, A. J. Restoration of the Round Ligaments in Retroversion of the Uterus 56

CHODURA, A. The Transplantation of Free Muscle into the Nephrotomy Wound 94

YOUNG, H. H. The Operative Cure of Incontinence of Urine with Illustrative Cases 96

FRANCOIS, P. The Operative Treatment of Incontinence of the Urinary Bladder 96

JOHNSON, G. L. A New Method of Removing the Lens in Its Capsule 96

##### Anesthesia

DRUCKER, L. Conduction Anesthesia in the Leg 6

KORNO, F. Experiences in 600 Cases of Local and Conduction Anesthesia 6

JOHNSON, T. A New Technique for General Spinal Anesthesia 16

SCHOLL, A. J. J. Further Experiences in Sacral Anesthesia in Urology 163

WIDENOT, S. and DANLSTROM, S. The Dangers of Lumbar Anesthesia 63

#### SURGERY OF THE HEAD AND NECK

##### Head

ZIMMERMAN, A. Malignant Tumor of the Temporal Bone 63

SALON, B. Skull Fracture for Choked Disk? 63

GORDON, A. Unusual Pattern of Symptoms in Some Cases of Pilo-cerebellar Tumors 64

DECKER, J. E. M. A Contribution to the Study of Brain Abscess 64

NEW, G. B. The Delayed Pedicle Flip in Plastic Surgery of the Face and Neck 165

GORTLER, M. J. The Indications for the Radical Mastoid Operation 90

##### Neck

DUNE, J. Clinical Experiences in 240 Operations for Goiter with Special Consideration of Recurrent Goiters and Operations for Recurrence 65

KLOFF, H. and HELLING, A. Recurrence of Goiter 166

OKADA, W. The Treatment and Prognosis of Carcinoma of the Larynx 66

#### SURGERY OF THE CHEST

##### Chest Wall and Breast

HALE, J. A. Bleeding Breasts, with Few Cancer Statistics from the Druggan Hospital 66

LEE, B. J. The Treatment of Recurrent Inoperable Carcinoma of the Breast by Radium and the Roentgen Ray 67

STERNFIELD, M. J. Does Radiation Enhance Post-operative Recurrence of Carcinoma of the Breast? 67

##### Trachea and Lungs

SERRA, G. Tracheocele Complicated by an Effusion of Blood 68

HEDBLUM, C. A. Graded Thoracoplasty in Chronic Pulmonary Suppuration, with Special Reference to Diffuse Bronchiectasis 68

SUTTON, G. E. Pulmonary Fat Embolism 68

TELLER, A. F. and BLACKMAN, J. R. The Effect of Heavy Radiation on the Pleura and Lungs 69

COLLIER, C. U. Surgery of the Lung 69

##### Pharynx and Esophagus

BROWN, T. A. T. Cases of Symptomatic Perforation of the Esophagus Revealed by Sequelae in the Lungs 69

#### SURGERY OF THE ABDOMEN

##### Abdominal Wall and Peritoneum

COTTE, R. The Anatomy and Surgical Bearing of the Nerves Found in the Abdominal Wall 170

WERNER, R. R. Radical Operation for Femoral Hernia with the Aid of Active Muscular Closure 70

III

- HELLINGHALL, H. The Radical Operation for Inguinal and Femoral Hernia with Plastic Use of the Uterus through the Abdominal Cavity and Simultaneous Laparotomy for Another Condition
- SOUTER, H. S. The Operative Treatment of Difficult Hernia
- DEWEY, B. S. The Diagnosis of Peritonitis and Peritoneal Transudates by Means of Abdominal Paracentesis with Capillary Tube
- KIRKPATRICK. The Surgical Treatment of Peritonitis
- Gastro-Intestinal Tract
- MORRIS, G. O. Gangrenous Perforation of the Stomach, Complication of Duodenogastric Hernia
- HALBERTSMA, J. J. A Fibroma of the Wall of the Stomach Adherent to an Ulcer on the Lesser Curvature
- DEWEY, X. and DUNN, C. Repeated Interventions in Gastric Carcinoma
- CHURCH, O. The Importance of Anacardium in Surgical Practice
- LAMP, W. A. On the Treatment of Non Malignant Affections of the Colon
- LOCKHART-MUMFORD, J. P. The Treatment of Acute Obstruction from Cancer of the Colon
- FAMLEY, W. A. A Scalping Operation for Abscesses Above the Rectum
- FRANCIS, J. R. Carcinoma of the Rectum and Pelvic Colon. Apt and St. Jockhans and Paphlania
- Liver, Gall-Bladder, Pancreas, and Spleen
- BONNIE, L. Cholecystitis Cystica
- MORRIS, R. The Diagnosis and Treatment of Cholelithiasis
- WILLIAMS, C. The Techniques of Lapsing the Biliary Passages
- SURGERY OF THE EXTREMITIES
- Conditions of the Bones, Joints, Muscles, Tendons, Etc.
- MURPHY, E. A Peculiar Form of Tumor Like Osteosarcoma
- BAKER, C. F. Report of an Unusual Foreign Body in the Arm
- Fractures and Dislocations
- BLANCHARD. The Trans Olecranon Route for the Reduction of Old Dislocations of the Elbow
- ANDERSON, G. Necrosis of the Proximal Fragment in Fracture of the Neck of the Femur and Its Importance with Regard to the Hip Joint
- BOW, J. R. The Operative Treatment of Subcapital Fractures of the Neck of the Femur
- Burgery of the Bones, Joints, Muscles, Tendons, Etc.
- BRIDGES, R. Paralysis of the Shoulder Girdle
- OSSEL, S. A Prosthetic for the Thumb
- SURGERY OF SPINAL COLUMN AND CORD
- CARR, J. A Case of Backward Location of the Seventh Cervical Vertebra with Isolated Compression of Nerve Roots
- FRANK, C. H. and SETTLER, W. G. An Assay of Fourteen Consecutive Cases of Spinal Cord Tumor
- ELMER, C. A. and STROVER, B. The Mechanical Effects of Tumors of the Spinal Cord. Their Influence in Symptomatology and Diagnosis
- SURGERY OF THE NERVOUS SYSTEM
- ROCHONNOT, G. The Employment of Electrical Methods in the Diagnosis and Prognosis of Paralysis Due to Lesions of the Peripheral Nerves
- STEWART, J. S. B. Resection of Peripheral Nerves
- MISCELLANEOUS
- Clinical Notes—General Physiological Conditions
- HODGINS, R. R. Pre Cancerous Conditions of the Cervix Uteri
- WATSON, E. Cystic Kidney
- YANIS, M. J. L. The Pathology and Mechanism of Prostatic Hypertrophy
- Blood and Lymph Vessels
- DUGAN, L. The Dropsy of the Testis, Pathologic Anatomy, Pathophysiology and Surgical Treatment of True Anasarca
- SILVER, S. A New Method for the Treatment of Thrombo Angitis Obliterans
- Radiology and Radiotherapy
- HODGINS, P. C. A New Method of Simultaneous Stereoscopic Observation of Both Vastocles
- Industrial Surgery
- GRAY, H. R. The Acute Fatal Back Among Industrial Employers Alleging Compensable Injury
- Legal Medicine
- Malpractice in the Treatment of Fracture
- Payment of Surgeon Washburn Because of Alleged Malpractice
- Suit for Damages for Alleged Failure to Remove Phlebotomy
- Suit for Damages for Alleged Leaving of Gears in Wound

## GYNECOLOGY

## Uterus

- CULLIN, T. S. The Use of Sutures as Tractors in the Vaginal Operation for Prolapsus 86
- NATALITY, A. J. Restoration of the Round Ligaments in Retroversion of the Uterus 86
- HOOVER, R. R. Pre-Cancerous Conditions of the Cervix Uteri 86

## Adnexal and Peri-Uterine Conditions

- SAMSON, J. A. The Life History of Ovarian Hematomata (Hemorrhagic Cysts) of Endometrial (Mucoid) Type 86
- HOOT, M. R. Solid Carcinoma of the Ovary 88

## OBSTETRICS

## Pregnancy and Its Complications

- NORMAN, C. C. and MURPHY, D. P. Pregnancy in the Tuberculous with the Report of 66 Cases 89
- BLAKE, E. M. Bilateral Detachment of the Retina in Nephritis of Pregnancy. Reattachment of the Retina 90

## Puerperium and Its Complications

- PIPER, E. B. The Treatment of Puerperal Sepsis by the Use of Microcrystalline Intravenously With Report of Animal Experimentation in the Chemical Destruction of the Blood 90
- BRUKY, H. The Surgical Treatment of Puerperal Gas Bacillus Infection of the Uterus. Physiometra 9

## Labor and Its Complications

- HARVEY, C. C. and RICHES, M. P. The Action of Ergot and Solution of Hypophysis on the Uterus 89
- KORRAN, G. W. Intra Uterine Rupture of Vela mentous Umbilical Cord 90

## New-Born

- JOYCE, C. Patent Foramen Ovale 9

## GENITO-URINARY SURGERY

## Adrenal, Kidney and Ureter

- KELLY, O. Traumatic Subcapsular Rupture of the Kidney 9
- LOOMIS, H. The Surgery of Hemorrhoid Kidney 9
- ROSENLO, E. Cystic Kidney 93
- DEBRIE, LAUREN, R. The Histologic Lesions of Experimental Acute Hydrocephalus 93
- BLUM, V. The Diagnosis of Small Constrictions in the Renal Pelvis and Ureter 94
- CHERNATA, A. The Transplantation of Free Muscle into the Nephrotomy Wound 94
- HUTNER, G. L. Ureteral Stricture. An Important Etiological Factor in the So-Called Essential Hematurias 94
- CORDANO, A. S. and SCHLES, H. C. J. Carcinoma in the Ureteropelvic Junction. Metastatic from the Prostatic Report of Case 95

## Bladder, Urethra, and Penis

- YOUNG, H. H. The Operative Care of Incontinence of Urine, with Illustrative Cases 96
- FRANKENBERG, P. The Operative Treatment of Incontinence of the Urinary Bladder 96

## Genital Organs

- SCHWARTZ, A. H. and CAMER, J. Striptothrix Prostatitis 96
- TRICHS, W. J. L. The Pathology and Mechanism of Prostatic Hypertrophy 97
- HARRIS, S. H. Prostatectomy. A Review of Recent Series of 146 Cases with Five Deaths 97
- WARD, R. O. Cysts of the Epididymis 98

## Miscellaneous

- SCHOLL, A. J. JR. Further Experiences in Sacral Anesthesia in Urology 98

## SURGERY OF THE EYE AND EAR

## Eye

- BRUCE, S. A. The Relation of Orbital Affections to the Nasal Conditions 99
- SCHENKEL, W. T. Some Observations on Orbital Growth. Reports of Three Cases 99
- GAYROUD, S. R. Ocular Sporotrichosis 99

## Nasal and Ocular Surgery with Wide Extension Involving the Brain and Spinal Cord

- WOODS, A. C. and KARRY, A. The Therapeutic Use of Uveal Pigment in Sympathetic Ophthalmia 99
- JACK, C. M. Focal Infection in the Tarsal Gland. T. berous Ophthalmia 99



VERHOEFF, F. H. and FERRERAS, A. J. S. Injury of the Cornea and Conjunctiva Due to Fish Bite	202	EAR	
JACKSON, G. L. A New Method of Measuring the Lens in Its Capsule	20	HONGER, P. C. A New Method of Simultaneous Stereoscopic Observation of Both Mastoids	20
BLAIR, I. M. Bilateral Detachment of the Retina in Nephritis of Pregnancy. Reattachment of the Retina	20	GORTA, A. M. J. The Indications for the Radical Mastoid Operation	202

## SURGERY OF THE NOSE THROAT AND MOUTH

NOSE		THROAT	
BATHURST, S. A. The Relation of Orbital Abscesses Due to Viral Conditions	199	ORLANDO, W. The Treatment and Progress of Carcinoma of the Larynx	66
		JACK, C. M. Focal Infection in the Tonsil Causing T. Lenticular Ophthalmia	200

## BIBLIOGRAPHY

### GENERAL SURGERY

SURGICAL TECHNIQUE		Blood and Lymph Vessels	209
Operative Surgery and Technique	20	Surgical Diagnosis, Pathology, and Therapeutics	219
Anesthetics	20	Radiotherapy and Radium Therapy	21
SURGERY OF THE HEAD AND NECK		Industrial Surgery	10
Head	202	Hospital Medical Education and History	212
Neck	203	Legal Medicine	
SURGERY OF THE CHEST		GYNECOLOGY	
Chest Wall and Breast	203	Uterus	
Trachea and Lungs	203	Adrenal and Peri-Uterine Conditions	21
Heart and Vascular System	204	Internal Genitalia	
Pharynx and Esophagus	204	Mesenteric	
SURGERY OF THE ABDOMEN		OBSTETRICS	
Abdominal Wall and Peritoneum	204	Pregnancy and Its Complications	22
Gastro-Intestinal Tract	204	Labour and Its Complications	21
Liver, Gall Bladder, Pancreas, and Spleen	205	Puerperium and Its Complications	
Mesenteric	205	Newborn	3
SURGERY OF THE EXTREMITIES		Miscellaneous	213
Conditions of the Bones, Joints, Muscles, Tendons, etc.	207	GENITO-URINARY SURGERY	
Fractures and Dislocations	207	Adrenal, Kidney and Ureter	1
Surgery of the Bones, Joints, Muscles, Tendons, etc.	208	Bladder, Urethra, and Penis	214
SURGERY OF THE SPINAL COLUMN AND CORD	208	Genital Organs	214
SURGERY OF THE NERVOUS SYSTEM	209	Miscellaneous	14
MISCELLANEOUS		SURGERY OF THE EYE AND EAR	
Chemical Lesions—General Physiological Conditions	209	Eye	215
		Ear	215
		SURGERY OF THE NOSE, THROAT AND MOUTH	
		Nose	216
		Throat	10
		Mouth	216

## AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- |                         |                     |                         |                    |
|-------------------------|---------------------|-------------------------|--------------------|
| Arbussen, G 76          | Dickie J K M 164    | Johnson, G L 80         | Sachs, B 64        |
| Baker C F 73            | Drumner L, 6        | Jonacaco, T 6           | Sampson, J A 86    |
| Blackman, J R 169       | Duby, J, 165        | Joyce C 9               | Schochet, S E 145  |
| Blake, E M 30           | Ducret, C 7         | Keller O 93             | Scholl, A J J 63   |
| Blanchard, 76           | Eggers, H 92        | Klose, H 66             | Schwartz, A H 96   |
| Bham, V 94              | Elaberg, C A 79     | Knapp, A 100            | Serra, G 68        |
| Bodnar, L 74            | Fankler W A 74      | Koenig, I 63            | Shoemaker W T 99   |
| Bonan, R 76             | Fraunberg, P 96     | Kornak, O W 90          | Silbert, S 83      |
| Bourquignon, O 80       | Frazer C H, 77      | Lane, W A 73            | Sittenfeld, M J 67 |
| Brown, T A 69           | Friedenwald, J S 80 | Lee, B J, 167           | Smeesters, E 77    |
| Broett, H 9             | Gafford, S R, 100   | Lockhart Mummery J P 73 | Souttar, H S 71    |
| Brunson, S A, 99        | Giordano, A B 95    | Malchow E 75            | Spiller W O 77     |
| Burgess H C J 93        | Gordon, A, 63       | Mappert, O G 7          | Stockey B 79       |
| Cabera, J 77            | Gottlieb M J 80     | Morison R 73            | Stopford, J S B 82 |
| Casoli, J 96            | Halbertson, J J 7   | Murphy, D P 89          | Setton, G E, 168   |
| Cagnoni, O 72           | Hald, J K, 66       | Neuma, H 100            | Trenkham, J L 97   |
| Carmata A 94            | Harris S H, 97      | New G B 65              | Tyler A F 69       |
| Collins, C U 69         | Hastell, C C, 80    | Norra, C C, 80          | Verhoeff, F H 80   |
| Cono, H R 83            | Hedblom, C A 68     | Nyarkay A J 86          | Ward, R O 98       |
| Coyte, R, 70            | Hefkottell, H, 7    | Olade, W 66             | Wideros, S 63      |
| Collen, T S 86          | Hell w. A 66        | Orall, S 77             | Williams, C 75     |
| Dahlstrom, S 63         | Hodges, P C 80      | Pennington, J R 74      | Woods, A C 100     |
| DeBernac-Lagarde, R, 93 | Hoon, M R, 88       | Paper L B 90            | Womado, E, 93      |
| DeGartano, L 83         | Hoskins, R L 86     | Rieschle 7              | Wreden, R R 70     |
| Delore, K 7             | Hreuter G L 94      | Rucker M P 89           | Young, H H 106     |
| Denner R S 7            | Jack, C M 100       |                         | Zebrowski, A 103   |



# INTERNATIONAL ABSTRACT OF SURGERY

MARCH, 1923

## COLLECTIVE REVIEW

### EMPHYEMA<sup>1</sup>

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#### INTRODUCTION

THIS collective review is not an attempt to solve the problem of empyema, but discusses some of the numerous views. Neither can it be claimed to offer anything new in reference to the etiology, pathology or treatment. Its chief object is to present as impartially as possible the data advanced by certain writers. Men of great ability as surgeons and internists differ widely regarding this condition and especially with regard to its treatment. This is especially true of those who have made reports during the past five years, possibly because an unusually large number of empyema cases followed the recent epidemics of measles, influenza, and various types of pneumonia.

A study of these papers reveals the fact that a great number of writers are not familiar with the history of the treatment of empyema. This is evident from what they regard as new discoveries and new methods of treatment.

As stated in an editorial ( ) A knowledge of medical history is a most distressing thing for it discloses persistently that this or the other new discovery is only a rediscovery. We must take our consolation in the fact that generally the first steps were but halting ones, not being backed by sufficient force of actual knowledge to permit them to reach their goal, and hence our newer progress on a more substantial basis is, after all, the only worthwhile advance.

In abundant material it is not unusual to discover apparently new diseases, new symptoms, or new relationships between diseases and symp-

tems, and apparently new methods of treatment. Moreover, findings which in isolated cases do not seem striking assume added importance when seen in numerous cases in a brief period of time.

#### HISTORY

In order that the reader may have a clearer conception of the evolution of the modern methods of treatment, a brief résumé of the history of the treatment of empyema seems warranted even at the risk of repeating facts known to many.

The term empyema (*ex*=within and *pus*=pus) appears to have been used by the ancients to designate an internal collection of pus in the pleural cavity, the lung substance (abscess) or the cavities of ulcerative tuberculosis. Aetius ( ) is believed to have been the first to restrict the term to pleural collections.

The first description of the symptoms and nature of empyema is generally credited to the great master Hippocrates, who made frequent mention of the condition in his writings (4). It is fully described also in the books of the Hippocratic school (5) but there is some doubt as to whether these were the product of his pen. It appears that Hippocrates gained his knowledge of empyema and other diseases from his ancestors, the Asclepiades, who presided over the temples of health in Greece and are the accredited authors of the first book of *Prognostics* and the *Canon Prognostics* which together according to Adams (4) and other authorities, formed the basis of the *Prognostics* of Hippocrates and contained an excellent account of the means of recognizing

<sup>1</sup>Approved for publication, office of the Surgeon General.

this disease one of the oldest known to medicine (5). There is no doubt that Hippocrates was familiar with both forms of pus collections in the thoracic cavity—tuberculous cavitations and empyema—as we know them today. This is evident from Paragraph 27 of the translation of the *Prognostics* given by Adams.

"Empyema may be recognized in all cases by the following symptoms. In the first place the fever does not go off but is slight during the day and increases at night, and copious sweats supervene; there is a desire to cough and the patient expectorates nothing worth mentioning; the eyes become hollow; cheeks have red spots on them; the nails on the hands are bent; the fingers are hot, especially their extremities; there are swellings in the feet; they have no desire for food and small blisters (phlyctenae) occur over the body. These symptoms attend chronic empyemata and may be much trusted to and such as are of short standing are indicated by the same provided they be accompanied by these signs which occur at the commencement, and if at the same time the patient had some difficulty of breathing. Whether they will break earlier or later may be determined by these symptoms—if there be pain at the commencement and if dyspnoea, cough and ptyalism be severe the rupture may be expected in the course of twenty days or still earlier; you may expect from these the rupture to be later but the pain, dyspnoea and ptyalism must take place before the rupture of the abscess. The patients recover most readily whom the fever leaves the same day that the sweats begin; when the alvine discharges are small and consistent, the matter quite smooth uniform in color and free from phlegm. They die whom the fever does not leave or when appearing to leave them, it returns with exacerbations; when they have thirst, but no desire for food and then are watery discharges from the bowels; when the expectorations are green or lilac or putridous and frothy. If these occur they die."

It is evident from this very clear clinical picture that rupture of an abscess into the bronchus is indicated instead of rupture through the external chest wall. A similar effect is produced by artificial pneumothorax (6), a procedure first practiced over twenty-three hundred years ago.

Hippocrates was familiar also with surgical procedures and called attention to the dangers of too early operation and too speedy evacuation of the pleural contents (7). With regard to pre-operative measures he stated that the patient should be prepared fifteen days after the onset of the disease by washing him very thoroughly

with warm water. This recognition of the importance of cleanliness suggests the dawn of aseptic principles (8).

With regard to the use of the knife it is stated in one book of the *De Morbis* (9) that before the incision was made the skin was marked. Elsewhere it is stated merely that an incision was made in the skin between the ribs with a sword-like knife (*μαχαίρην* or *μαχίαν*) the subjacent parts being then perforated with a pointed knife (*ἄκρον ἀξιδελφὸς μαχίαν*) guarded by a piece of rag or wood around it; that only a portion of its length the size of the thumb nail was exposed. When the pus was reached some of it was allowed to escape, the incision being then plugged with a stiff linen tent fixed to a thread. The tent was removed twice daily for a period of ten days for gradual evacuation of the fluid and at the end of this time the cavity was allowed to empty itself. In order that the lung which had become accustomed to the presence of fluids might not dry too quickly warm wine and oil were injected through the fistula (9).

Therefore from these old masters we learn of the great danger of too early operation and too rapid evacuation of fluids from the pleural cavity. They tell us also how to prevent the loss of tents and drainage tubes in the pleural cavity by means of a linen thread, and instruct us regarding the use of oils and antiseptics in the treatment of infection. Their method of draining through the rib in order that they might have a rigid structure to cork and uncork was re-discovered by a later writer.

The teaching of the School of Cos was in vogue during the next five or six centuries. Celsus (10) mentioned empyema as a complication of fracture of the ribs. During the sixth and seventh centuries operative procedures lost favor on account of poor results. Instead of the knife, a cautery was used—a method employed by the Arabians (11).

From this period to the sixteenth century few writers advocated operative measures, and those who opened the chest followed the directions of Hippocrates. In 1559 Pare (12) treated empyema by intercostal incision and resection of ribs. He warned of the danger of wounding the vessels near the ribs and advocated drainage of small amounts at intervals.

Early in the seventeenth century Florenus advocated early closure of chest wounds in opposition to the time honored custom of keeping the fistula opened. The subsequent use of the trocar may also be traced to the practice of the seventeenth century.

De la Motte (13) in 1772 and Hester in 1748 advocated incision and gave up the injection of fluids into the chest cavity, which they concluded was a harmful procedure. Bass (14) was the first to suggest that air should be excluded by means of a valvular opening which would close the orifice after the fluid had escaped. In 1810 Morand (15) suggested that the effusion be aspirated once or twice at intervals of a week before the chest cavity was opened. Thus it is not surprising that when Sedillot attempted to popularize the surgical procedure, Dupuytren (16) the greatest surgeon of his time, declined operation when he himself was suffering from empyema, uttering the classical statement that he would rather die by the hands of God than by those of the doctors. The great Velpeau had lost practically all of his cases of empyema, and Dupuytren had seen only four recoveries in fifty cases. Most of the latter however were treated by aspiration.

In 1899 Laennec published his epoch-making work on auscultation which made the diagnosis of empyema easier. Williams (17) recommended repeated tapping and the displacement of the pus with water injected through a double-tube cannula. If the pus did not disappear he employed nitrate of silver and sodium chloride solution, a procedure rediscovered by Diederich (18).

In later years chlorinated solutions were employed. Trouessart (19) favored particularly the injection of iodine but used chlorinated solutions also.

This brings us to the more modern and refined methods of treatment. It is clearly evident, however, that the numerous new procedures advocated in the epidemic of the Great War are very similar to those employed in the past, especially the late operation advocated by the great master Hippocrates more than twenty-three centuries ago.

#### ANATOMY AND PHYSIOLOGY

While it may seem elementary to review certain anatomical and physiological considerations with regard to the thorax, this basic knowledge is necessary for a correct understanding of the pathology, diagnosis, and treatment of empyema. Green (20) believes that apparent disregard or misunderstanding of the true physiology and pathology of the condition was responsible for the high mortality of 84 per cent in one army camp and an average mortality of 32 per cent in all army camps (21).

In the following discussion the anatomy and physiology of the chest will not be described in detail, but mention will be made of the salient points having a direct bearing on empyema.

The lymphatics of the thoracic wall consist of three main groups:

1. A superficial group to the muscles and skin most of which terminate in the axillary nodes.

2. The intercostal lymphatic vessels which drain the intercostal muscles and pleura. Those draining the external intercostal muscles run back, and after receiving the vessels which accompany the posterior branches of the intercostal arteries, terminate in the posterior intercostal nodes. Those of the internal intercostal muscles and parietal pleura consist of a single trunk in each space. These trunks run forward in the subpleural tissue, and the upper six open separately into the internal mammary nodes or into the vessels which terminate in the lowest of the internal mammary nodes (22). There are few lymphatics beneath the ribs. Stomata are found over the intercostal spaces, but not over the ribs. Lymph vessels are also numerous over the intercostal spaces (23).

3. The lymphatics of the diaphragm. These form two rich plexuses, one on the thoracic surface of the diaphragm and the other on its abdominal surface.

The anatomical relationship of the lymphatics of the chest wall explains the extension of infective processes with the formation of abscesses which have been found so frequently beneath the sternum (24) and the posterior portions of the chest wall. A point of great importance is that in resection of a rib we pass through an area with practically no lymphatics, while in thoracotomy the possibility of infecting distant parts through the lymphatic streams is greater.

The lymphatics of the lung may be subdivided into two plexuses, a superficial plexus situated beneath the pleura, and a deep plexus which accompanies the branches of the pulmonary vessels and the ramifications of the bronchi. There is little or no anastomosis between the superficial and deep lymphatics of the lung except in the region of the hilus. Miller (25) describes collections of lymphoid tissue situated beneath the pleura.

The pleura, like other serous surfaces, do not have sensory nerves. Therefore contrary to the general impression, the pain or stitch of pleurisy is not due to the rubbing of the surfaces but is a referred pain caused, according to McKenzie (26) by spasm of the intercostal muscles.

Under normal conditions the intrapulmonary pressure expands the lungs until they fill that part of the thoracic cavity not occupied by other organs. As the chest cavity varies with respira-

tion the volume of the lungs must change accordingly in order that at all times the lungs will fill fully every part of the chest cavity. The expansion of the lungs is not uniform, however, since different parts of these structures are not equally extensible. The root of the lung containing the bronchus, vessels, and fibrous tissue offers the greatest resistance to an expanding force while the bronchial and vascular ramifications radiating toward the surface with pulmonary tissue between them are more extensible and the outer 25 or 30 millimeters of peripheral lung tissue have the greatest extensibility. The expansion of the lung is accomplished by separation of the less extensible rays of tissue which permits the expansion of the more extensible pulmonary tissue between them (Keith, 27). It must be remembered also that the expansion of the lung does not take place instantaneously and equally throughout. If the chest wall or the lung is perforated so that air can communicate with the pleural cavity from without or from the bronchial tree the lungs promptly shrink in size since the atmospheric pressures on the outside and in the inside of the sac are then equalized.

In addition to this purely mechanical action other factors must come into play in the collapse of the lung. Rees and Hughes (23) and many other observers have noted partial and massive collapse of the lung structure. Pasteur (29) was the first to attribute this to the reflex inhibition of the diaphragm which he had observed following an abdominal operation in which the diaphragm was not injured.

The intrapleural pressure is subatmospheric, being -5 millimeters during rest and -10 millimeters during inspiration.

#### BACTERIOLOGY

Perhaps no subject in the entire realm of medicine has been given greater attention than bacteriology during the recent pandemic of influenza. As empyema may be caused by a great variety of organisms, either primary or secondary invaders, it will be necessary to include in our discussion bacteria of associated lesions as well as those which occur in the respiratory tract.

The pleura may be infected through the chest wall, the blood and lymph streams, and the respiratory tract, and by direct extension from adjacent infected parts. Organisms introduced into the pleural cavity through the thoracic wall in gunshot or stab wounds vary in different localities, depending upon soil contamination, the clothing and cleanliness of the individual, and many other factors. In France where intensive

cultivation is carried on numerous anaerobic as well as aerobic infections are seen. Elliott and Henry (31) report that 10 per cent of the cases of haemothorax are infected with anaerobic bacteria. Griffiths (32) records two cases of empyema following aspiration of the chest cavity. Both primary and secondary tuberculosis of the pleura have been noted. Wilson (33) records a case due to caries of the dorsal vertebrae. Rupture of subphrenic abscesses or echinococcus cysts into the pleural cavity may lead to pneumonia. The contents of these cysts are very irritating to the tissues. In one autopsy performed by the author in a case of empyema the condition was due to rupture of the esophagus by instrumentation in the removal of a foreign body. Gonorrheic lymphatic metastasis from a peritoneal infection has been recorded by Woodberry (34). Osler (35) states that in Munich empyema was found in about 2 per cent of the autopsies in cases of typhoid fever.

It is obvious that as a rule empyema is due to a respiratory infection. In spite of the vast amount of work which has been done on the respiratory flora, however, no definite advances have been made in determining the relationship of the normal profuse inhabitants of the upper respiratory tract to acute and chronic diseases. Bloomfield (36) believes that a serial quantitative method of culture is necessary.

Soper (37) reports that from September 22 to December 1, 1918, there were 300,719 cases of influenza among the troops in America. During the same period there were 48,079 cases of pneumonia and 19,419 deaths. The total strength of troops was about one and a half million. Therefore it is correct to say that approximately one in every five had influenza, and of these, one in six developed pneumonia, and that of the patients with pneumonia two in five died. The total number of deaths throughout the United States, including the civilian population, was approximately 360,490.

Blanton and Irons (43) report that of a series of 357 normal persons examined before the outbreak of the influenza epidemic, a hemolytic streptococcus was found in the respiratory flora in 75 per cent. In a study of 863 nasopharyngeal cultures on defibrinated blood agar plates, Maize (38) isolated the influenza bacillus in 39.5 per cent, streptococci in 28.4 per cent, pneumococci in 9.4 per cent, and hemolytic streptococci in 2.5 per cent. Small (39) records a study of 1,385 cases of pneumonia in which the incidence of empyema was 9 per cent and the sputum examinations showed that the condition was due to the pneumococcus in 48

per cent (*Pneumococcus* Type 1 21 per cent Type 2 34 per cent Type 4 45 per cent.) Streptococci were found in 46 per cent of the total number of cases, and of these 54 per cent were hemolytic streptococci. John (40) in a study of 136 cases, isolated hemolytic streptococci in the sputum in 36.7 per cent, pneumococci in 31.8 per cent, and the influenza bacillus in 2.4 per cent.

It must be borne in mind that the bacteria mentioned may be found also in the normal mouth and pharynx. Davis (41) reports that no lesions of importance were produced in experimental infection of the intestine with hemolytic streptococci. Hiss and Zinsser (42) state that the hemolytic streptococci are found less frequently in the normal mouth, but may be present without causing disease. However the presence of the hemolytic streptococci in the mouth in association with some lesion of the respiratory tract is apt to indicate an etiological relationship.

The positive blood cultures obtained throughout this epidemic were very few in number. John (40) reports 43.3 per cent positive cultures in the streptococcal infections, and 3.8 per cent positive cultures in the pneumococcal infections. It may be stated also that 93.8 per cent of the cases with positive cultures of hemolytic streptococci were fatal. Blanton and Irons (43) obtained only eleven positive cultures in 510 cases of influenza. Hamburger and Mayers (44) look upon empyema as a distinct general sepsis with associated pneumonia and quote Jochmann (45) as stating that streptococcal sepsis may progress with the picture of a lobar pneumonia which may be the source of the sepsis or secondary to it, and that the pleura may be the seat of primary empyema or serve later as a source of streptococcal sepsis. McClelland (46) reports that blood cultures were positive in 50 per cent of 4,950 cases clinically diagnosed as influenza, and that in 1,321 of these pneumonia developed which in 416 proved fatal.

In the opinion of a large number of authoritative bacteriologists the organism of Pfeiffer was not the etiological factor in the pandemic under discussion. Jordan (47) states: "We have in the pandemic influenza an infection with an unknown or unrecognized virus which increases the susceptibility of the normal individual to infection with various pathogenic respiratory organisms, and superimposed on the original infection we have a variety of secondary infections." Hektoen (48) and Vaughan (49) are of the opinion that the cause is an unknown condition complicated by secondary infections due to bacteria the type of which is

dependent upon the local conditions in the different parts of the country.

Nicolle and Lebaully (50) report the experimental production of the symptoms of influenza in monkeys and man with filtrates of nasal secretions and blood from uncomplicated influenza cases. The symptoms observed were similar to those of cases occurring in the pandemic. Dujaric de la Riviere (51) produced influenza in himself by injecting the filtrates of blood from four persons suffering with influenza. More recently Ostilly and Gates (52) have succeeded in producing changes in the respiratory tract with a substance which they have been able to carry through fifteen successive animals. Because of these results they are of the opinion that they are dealing with the transmission of a multiplying agent rather than with an active substance produced by it.

On the other hand Nurum, Pilot, Stangl, and Bonar (53) were able to isolate the influenza organism in only 8.7 per cent of the 2,000 cases studied and therefore conclude that the pandemic was not due to a filterable virus. Krumbhaar (54) reports finding a bacillus identical with that of Pfeiffer in 75 per cent of his cases. Keegan (55) states that the results of cultures taken directly from the lungs show that bacillus influenza occurred either in pure or mixed culture in 82.6 per cent of twenty-three cases studied. Roseman obtained it in 83 per cent of twenty-six autopsies.

In the report on the influenza epidemic in the British armies in France (56) it is stated that the Pfeiffer bacillus was recovered from ninety-one of a series of 220 specimens of sputum, from sixty of 164 specimens from the nasopharynx, and from two of sixty-eight blood cultures. Smith (57) considers bacillus Pfeiffer the etiological factor.

In various army camps the results of bacteriological examination of the pleural fluids in empyema corresponded more closely than the sputum and blood cultures. In 158 pleural exudates from seventy-five cases examined by Drinell (58) the hemolytic streptococcus was isolated in seventy-four, the influenza bacillus in fourteen, the hemolytic staphylococcus in twenty-two, non-hemolytic streptococcus in twelve, and the pneumococcus in twenty-five. Manson (59) records finding hemolytic streptococci nineteen times in twenty-nine cases, and Brooks and Cecil (60) have found them fifty times in eighty cases. Schorer, Clark, Sanderson, and Dickson (61) report that fifty-six of eighty-one pleural exudates from 181 cases of pneumonia were purulent. Hemolytic



streptococci were found in 53.5 per cent of the exudates, and 70.14 per cent of the purulent pleural fluids. Blake (62) has made an interesting observation on streptococcus viridans; he found that the changes occurring in the blood plates are due to the change of oxyhemoglobin to methemoglobin that this occurs only in the presence of a living micro-organism; that it appears to depend upon the metabolic activity of the bacteria rather than upon the virulence of the particular strain, and that its intensity has a close relationship to the rapidity of growth. The reaction seems to depend upon oxidation and reduction, and can be obtained in the absence of excess of oxygen.

Simmons and Bigelow (63) report the presence of diphtheria bacilli in sixty cases. The strains isolated in 17.8 per cent were virulent for guinea pigs. The bacilli did not cause any symptoms and the patients remained carriers until the empyema cavity healed.

Stone (64) compares the percentages and the type of organisms observed in the three series of cases of empyema as follows:

Bacteria	Cases	Percent of cases	Pneumococci Per cent
1	7	73.3	26.7
2	95	73.6	26.3
3	85	70.4	29.4

In chronic empyema the bacterial flora is quite varied. The hemolytic streptococci remain for a long time in the exudate. *Bacillus pyocyaneus* was one of the most resistant organisms the writer had to contend with in the chronic cases. This was especially true in cases complicated by bronchial fistula in which appropriate treatment for the elimination of this organism could not be instituted.

#### PATHOLOGY

When the pleural cavity contains a purulent exudate the condition is designated as thoracic empyema or purulent pleurisy. The exudate varies in quantity from a few centimeters to several liters and its quality varies according to the mode of its formation, its etiology and the duration of the disease.

In a restricted sense the pathology includes only the morbid changes occurring in the walls of this potential sac which has been converted into a true cavity. As a matter of fact, however, the pleura is the primary seat of the disease in only a few cases. As a rule, the condition is associated with other lesions of which it may be regarded as a part or sequela or is due to the presence of a foreign body. Because of failure to recognize

these facts protective collection of fluid in the pleural cavities in massive acute pneumonia have often been evacuated surgically with fatal results.

Primary empyema may be attributed to two modes of infection. Heller (65) suggests that the pleural reactions can be induced by the absorption of bacteria inspired with the air and carried to the pleura by the lymphatics. However, as the pleural and the deep lymphatics of the lung do not anastomose very freely this probably occurs very infrequently. Another hypothesis advanced is that in bacteremia the bacteria have an elective affinity for the pleura. Lichtenstein (66) remarks that in previous epidermides there were numbers of cases of severe primary grippe pleuritis which began with chills, a high continuous fever, extreme dyspnea, and marked cyanosis, and in which in a very short time there was a rapid accumulation of pleural fluid. In repeated postmortem examinations it was definitely proved that these were primary pleuritis without any co-existing inflammatory infiltrations in the lungs. Streptococci were often found in pure culture in the exudates.

Wilensky (67) states that over 90 per cent of the cases of empyema are due to post-pneumonic processes spread by continuity from neighboring perforating abscesses or to metastases from distant lesions. Rosenbach (68) suggested that many cases of post-pneumonic empyema may be induced by rupture into the pleural cavity of small subpleural abscesses resulting from the liquefaction of consolidated portions of the lung. Moschowitz (69) apparently unaware of Rosenbach's observation draws a similar conclusion. He objects to the common view that empyema is due to infection by contiguity as this complication is not observed in infection of other serous cavities. Diffuse peritonitis seldom, if ever, results from acute appendicitis unless there has been perforation of the appendix or necrosis of its wall. Moreover, infection of the pleura by contiguity would presuppose flow of lymph in a direction opposite to that demonstrated by physiologists and anatomists. In a large percentage of thirty-six autopsies Moschowitz found subpleural abscesses perforating into the pleura.

As a rule the purulent fluid becomes encapsulated by the deposit of fibrin in the periphery of the cavity. These encapsulations may be single, multiple, localized, or diffuse. While a seropurulent pleurisy is always free, a purulent pleurisy is nearly always encapsulated. The bronchial fistula is due to the rupture of a subpleural abscess into the pleural cavity. Only in

rare instances is it secondary to rupture of the empyema cavity into the bronchial tree. When encapsulated pus occurs in thin sheets between the lobes, the condition is termed interlobar empyema. This is the multiple encapsulated localized empyema. Dissecting pleurogenic pneumonia is formed in the interstitial tissue along the lymphatics.

Pathological changes in the pleura show considerable variation. Especially in pneumococcal empyema in children the pleura may present a normal smooth and glistening surface covered with a purulent exudate. As a rule however the surface is dull and finely granular shows marked congestion of the blood vessels, and is covered with flakes of fibrin. In other cases there is a pseudo-membrane which strips off easily leaving a smooth surface lined by endothelial cells. In still others the polyhedral endothelial cells may be degenerated or there may be degeneration of the sub-endothelial connective tissue, a change which may alter the character of the exudate. Locke and Barker (70) are of the opinion that endothelial cells are the predominating type found in the exudate of influenza; these are not seen in pleuritis due to streptococci pneumococci or other organisms. He does not state whether they originate from the pleural surface or from the endothelial cells of blood vessels.

Graham (71) has shown by experiments that in the formation of pleural exudates the respiratory movements are of very great importance and that the largest amount of fluid is formed at the end of expiration.

It must be borne in mind that in addition to the presence of associated lesions of the lungs and the purulent exudate there is flattening of the diaphragm and a decrease in diaphragmatic movement due to partial paralysis. Barjon (72) has shown that this paralysis precedes the effusion and persists after its disappearance. It is not observed in cases of transudation such as the hydrothorax of Bright's disease, even though the amount of fluid is large.

The lesions of the lungs may be divided into the lobular lobar and interstitial bronchopneumonia. The term interstitial bronchopneumonia was introduced by MacCallum to designate a peculiar form following measles and usually associated with empyema. This condition was found in twenty six of his thirty-seven autopsies. The lobar and lobular pneumonia presented the well known textbook picture. Interstitial bronchopneumonia is described by Cole and MacCallum (73) as follows:

Analysis of the cases appears to show fairly

conclusively that the pneumococcus is responsible for those in which lobar pneumonia was found. The streptococcus haemolyticus, in most instances seems to cause a peculiar form of bronchopneumonia which on account of its anatomical characters, I have designated interstitial bronchopneumonia. There are, however, some cases in which this organism growing in overwhelming numbers or with especial virulence, produces a patchy pneumonia of a type more closely resembling the familiar lobular or bronchopneumonia found so often as a terminal event in persons dying of some chronic disease or in those in whom aspiration of infected material has occurred. This may be referred to as lobular pneumonia.

One of these infections may be superimposed on the other and there may even be found lesions corresponding to each in the same lung.

Fibrinopurulent pleurisy with abundant exudate has occurred with extreme frequency in these cases.

The interstitial bronchopneumonia has been studied in various stages in different cases and found to produce extraordinarily different appearances as it progresses.

"In the earliest stage the pleural surface of the lung is smooth and glistening. The lung is in general air-containing, although atelectatic patches may be making their appearance. On section, small hemorrhagic foci are found scattered through the lung, each showing as a rule, a gray rather opaque center. These foci measure from 2 to 3 millimeters in diameter sometimes more and are so small that several may occur in one of the secondary lobules of the lung; that is, in one of the lobules marked off by the interlobular septa (W. S. Miller). Microscopically it is found that these foci represent the ends of the bronchioles together with the adjacent alveoli. The bronchiole and the ductus alveolaris are filled with leucocytes, among which streptococci are found in pairs or in short chains. There is some infiltration of the bronchiole wall with leucocytes, and the adjacent alveoli contain a few leucocytes, occasionally streptococci, coagulable fluid and great numbers of red blood corpuscles. Not only the alveoli which form a continuation of the bronchiole but also those which lie near its wall, seem to be affected.

In a somewhat later stage the lung can still be distended with air although the patches of collapsed lung are more extensive. On section it is found studded throughout large areas with small gray nodules which project above the cut surface like military tubercles and are often surrounded by a red or grayish halo. At this time

there may be visible a minute cavity or depression in the center of each which marks the lumen of the bronchiole. This may be represented, however by the opaque contents of the bronchiole. These nodules have been mistaken by more than one for milary tubercles, and it seems conceivable that the peculiar appearance of this and later stages may be in part at least responsible for the almost universal statement that measles is commonly followed by tuberculosis.

Librino-parient pleurisy, often with excessive effusion of greenish, turbid fluid, accompanies the process from this stage on. In a still later stage the lung is usually much collapsed, dark blue flabby, and aries except in the anterior portions. This is produced chiefly by the pressure of the pleural exudat, but partially by the occlusion of the bronchioles. At this stage shot like nodules 3 or 4 millimeters in diameter may be felt all through the lung. On section the pass airless lung sinks into a concave surface leaving the gray peribronchial nodules projecting conspicuously as whitish-yellow lines marking out the whole lobulation of the lung into polygonal fields. In each of these fields there may be three or four projecting nodules which now usually show distinctly a central bronchial lumen. The surrounding tissue may be fairly dense, so that the peribronchial thickening is marked not chiefly by its opaque whiteness. Hemorrhage may in some cases stain the outlying regions about the nodules. If the bronchi be opened with the scissors, they are found to be lightly dilated toward the periphery of the lung where they become thick walled as they run into the terminal portion which form the center of the nodule. The contents are thick and glutinous.

In still later stages, more extensive infiltration of the peribronchial tissue occurs, and solid yellow patches from 1 to centimeters in diameter appear. The induration about these with edema and hemorrhage becomes confluent so that great large areas may appear consolidated. Septicemia occurs only in the hours just before death and in only one protracted case was there found an infarct like lesion in the spleen. In all the others the abdominal organs were normal.

Other pathologists have reported extensive changes in the other organs. Lock Wright and Kume (74) state that of 125 cases of influenza studied at autopsy the majority showed acute parenchymatous changes in the myocardium and other structures similar to those observed in other acute infectious diseases. Hamburger (75) states that parenchymatous degeneration and vacuolization of the myocardium occurred in the

fatal cases. Summers, Dinnerstein, and Frost (77) describe another picture found at autopsy in a group of influenza cases which resembled that of wood alcohol poisoning viz an intense congestion of the viscera without evidences of pneumonic lesions or associated only with lesions which were so small as to be negligible. Death was accompanied by signs of asphyxia. Careful chemical analysis failed to reveal the presence of poison.

In the recent epidemic the pathologic lesions are strikingly different. Symmers (76) records an extraordinary variety of pulmonary lesions which arose in the two lungs of the same case and in the lungs of different cases. Concomitant acmiparient pleural exudates were observed in 40 per cent of the cases, multiple pleural and subpleural abscesses in 44 per cent, and intrapulmonary abscesses in 55.5 per cent of all autopsies. There were extensive in areas of the interlobar and interlobular sections of the lungs and it was not uncommon to find solitary multiple, confluent or discrete abscesses of the parenchyma. The presence of acute degenerative changes in the heart liver and kidneys was another striking difference in the recent epidemic. Blood cultures showed streptococci in 10 per cent of the cases, whereas in the pandemic these cultures were almost invariably sterile.

In chronic empyema the pleura varies in thickness from a few millimeters to 2 or 3 centimeters. Usually it is covered with granulation tissue and microscopically is composed of granulation tissue. Collections of polymorphonuclear leucocytes and areas of necrotic tissue surrounded by more mature fibroblasts and showing round-cell infiltration are frequently seen. Sections of pleura from cases in which zinc chloride has been employed show small necrotic areas surrounded by dense bands of connective tissue in which small round cells and plasma cells form an outer wall. Bacteria can be demonstrated in the necrotic areas as well as in the outer zones. A large percentage of the pleura from chronic cases are tuberculous.

Osteomyelitis of the ribs is not an infrequent complication. Attempts at bone regeneration with bursae extensions of processes and bridge formation between the ribs are often found. These osteophytes are due to chronic inflammation.

#### SYMPTOMS AND DIAGNOSIS

The diagnosis of empyema is made on the observations of the patient and his clinical chart the physical signs, the roentgen-ray findings, and exploratory puncture. Frequently it can be made only by exploratory puncture. Gray (78)

states that in many cases diagnosed clinically as lobar pneumonia autopsy showed no evidence of pneumonic consolidation, but revealed instead large amounts of exudate or fluid with atelectasis of the lungs. The group of cases presenting the textbook symptoms offer no difficulty in the diagnosis. As a rule we find a decrease in respiratory movement on the affected side and bulging and increased fullness of the intercostal spaces. Vocal fremitus is absent. Percussion elicits flatness or marked dullness except at the apex above the fluid where the note is almost tympanic. On auscultation the breath sounds are absent.

Thomas (79) describes a syndrome which he regards as pathognomonic of the rupture of an encapsulated empyema into the pleural cavity. During convalescence the patient feels a sudden sharp pain in the chest following slight exertion. In a few hours he becomes critically ill, the temperature rises to 102 to 103 degrees F, the pulse becomes rapid, and respiration which is shallow and extremely painful, varies in rate between fifty and sixty per minute. The pain localizes in the lower part of the chest or in the abdomen. Distention with marked tympany extending well up over the liver and general tenderness may be more marked on one side than on the other. The chest findings are not striking, but indicate the presence of a small amount of fluid. There is marked leukocytosis. Prostration is extreme. Thomas believes this remarkable reaction is due to the toxemia resulting from the absorption of pus from the large serous surface rich in lymphatics.

In the influenza epidemic Reilly (80) noted an unusual syndrome consisting of paroxysmal attacks of pain on the right side at the level of the insertion of the diaphragm. In many instances this pain lasted about half an hour and returned at intervals of two or three hours throughout the day. Biering, Lugnbuhl, and Burt (81) record a severe infection affecting eight members of one family and causing seven deaths. Three of these persons developed empyema.

Mention should be made of pulsating empyema, first described by MacDonnell. This is of two types: 1. the intrapleural pulsating empyema and the pulsating empyema necessitatis in which there is an external pulsation. The pulsations are due to the heart impulse, but no satisfactory explanation of the mechanism of transmission of the beats has been offered.

Wesler (82) subdivided encapsulated empyema into four types: the parietal diaphragmatic, and interlobar and an encapsulation between the

lung and mediastinum. Peakund (83) describes an interlobar empyema which apparently followed latent pneumonia.

Empyema may perforate any of the thoracic viscera or extend to the external surface through a fistula opening at some distance from the pleural cavity. Foot (84) reports a case in which there was a communication with the psoas muscle. Meigs (85) had a case with a fistulous opening at the umbilicus. These more rare complications are included in the discussion of the diagnosis as they may be encountered as persistent sinuses and their true nature can be determined only by means of the X-ray with the injection of bismuth.

The X-ray is a valuable aid in the early diagnosis of empyema. Nims (86) observed that free collections of pus in the pleural cavity are usually preceded by small collections between the lobes. Manson (59) found the roentgen ray of value when the quantity of pus was 500 cubic centimeters or more, in which case the rib shadows are obliterated and the costodiaphragmatic angle is obscured. Contrary to accepted teachings, the shadow cast by thick pus is lighter than that cast by serous fluids and at times it is difficult to state from the plates whether or not pus is present. Shadows due to sanguinous fluid are relatively dense.

Muller and Loak (87) found that the X-ray is of less value in the differentiation of pus from consolidation but gives accurate data regarding lobe involvement. Diemer (88) emphasizes the value of the X-ray in the diagnosis of interlobar empyema, which is often very difficult to detect in the routine physical examination. Stewart (89) has pointed out that early effusions appear in the axillary space and stand out in the outer some of the chest cavity as ribbon-like shadows with a sharp inner border. Davis (90) concludes from a study of 1,000 cases that it is impossible to distinguish small amounts of fluid from consolidations of lung tissue. He points out also that as a rule the diaphragm is higher and more fixed on the involved side than on the non-pathologic side.

Lambert (91) emphasizes the necessity for a careful X-ray study of the cavities of chronic empyema before treatment is undertaken. This is best accomplished by injecting a semi solid or fluid substance which is opaque to the roentgen ray and is not injurious. Stevens (92) advocates the use of thorium nitrate, but in large cavities this may give rise to unpleasant reactions and hematuria. Beck (93) concludes from his experience in a large series of cases of empyema that there is no danger in the use of his paste if

the proper technique is employed. He does not agree with the statement that bismuth separates out of the suspension during the X-ray examination. The writer has seen Beck inject a large series of empyemata without causing any unfavorable after-effects.

While the roentgen ray is of great aid in the study of empyema the value of a large-gauge exploratory needle should not be forgotten.

#### COMPLICATIONS

The chief complication of empyema are sepsis and perforation. Perforation into a bronchus is indicated by an attack of violent coughing during which almost pure pus is expelled. The perforation or rupture of encapsulated empyema into the general pleural cavity has already been discussed with the symptoms.

Sudden death may result from too rapid evacuation of the pleural content and from injection of fluid into the chest cavity. In the latter case it is due to a pleuro-cardiac reflex (vagus). In very rare instances temporary blindness may follow injections of bismuth compound. The writer observed this once in a series of more than 200 cases, when the injection was made into a very large cavity. Apparently a convulsion was formed. The patient recovered completely in about ten days.

#### PROGNOSIS

It may be well to analyze the term prognosis before discussing the statistics. The prognosis is the prediction of the course of disease. It is possible to make a prognosis only when we have exact knowledge of the disease itself, the condition of the diseased body and the influence of treatment. It is obvious, then, that statistics on empyema are of only academic value. If it were possible to standardize the method of treatment and to agree as to the exact nature of empyema it would still be necessary to group the patient into numerous subdivisions on the basis of their resistance.

This can be fully appreciated when we study the report of Graham (84) of the Surgeon General of the United States Army on empyema in the base hospitals, a report compiled from a questionnaire sent to the principal base and general hospitals. The average mortality in twenty-five camps was 30.3 per cent. In those hospitals in which immediate drainage was advocated, it was 31.8 per cent, while in those in which drainage was delayed (aspiration only being done) it was 31.6 per cent. The mortality of simple thoracotomy was 39.4 per cent and that of rib resection

31.5 per cent. High as these figures are, however, they do not approach the remarkably high death rate in some of the camps. At Camp Funston the mortality was 84 per cent, at Camp Green, 57 per cent, at Camp Wheeler, 65 per cent, and at Camp Doniphan, 57 per cent. Graham attributes the striking differences between the various camps to the fact that there was marked disagreement as to the condition diagnosed as empyema and as to the method of treatment. The exudate varied from a slight turbid serofibrinous discharge to frank pus demonstrable only microscopically to frank pus recognizable on macroscopic examination. In general, the camps which reported the lowest mortality regarded a few cases of empyema only those in which the exudate was frank pus. Conversely, the highest mortality was that of camps in which all cases showing even microscopic pus in the pleural cavity were considered empyema cases.

If we include these borderline cases of pneumonia in the pandemic, the prognosis of empyema must be classed with that of bubonic plague and relapsing smallpox.

Lewin and Legendre (95) state that the prognosis of empyema should be based not on the nature of the fluid or the organism found, but on the condition of the pneumonia processes.

Miller and Lusk (87) have classified patients with streptococcal empyema into three groups: 1. Those who die early from acute toxemia before treatment is given.

Those with multiple pus foci. Death always results in such cases because it is impossible to detect and drain all of the foci.

Those with moderate toxemia and localized pus, who usually recover after early operation or aspiration followed by operation.

Clendening (96) has tried early operation, aspiration, and the let alone policy in the treatment of streptococcal empyema and has found that the results are about the same in the three groups. According to Hahn (97) the mortality from the new German clinical series from 1911 to 1914 was 5 per cent. La Ross (98) gives a mortality of 55 per cent for all ages, and 45 per cent for those of adult age. Holt (99) reports a mortality of 10 per cent for children under 1 year and of 53 per cent for those under 15 years. Walensky (100) reports a series of 200 consecutive cases from the years 1904 to 1904 in which the mortality was 25 per cent.

In cases studied by Clark (78) the mortality was 41 per cent when the empyema developed the first week, 20 per cent when it developed the second week, and only 7 per cent when it de-

veloped later than the second week. In cases treated surgically the mortality was 21 per cent, while in those not operated upon (not including cases operated upon late) it was 74 per cent.

The prognosis of infected haemothorax depends upon the nature of the wound, the causative factors, and the organisms in the clot. In a study of 450 cases Hutchinson (101) found that bullet wounds were less serious than other gunshot wounds. Infection occurred in about one-fourth of the shell wounds in which the missile was not retained and in about one-half of these in which the missile was retained. In another communication Hutchinson (102) states that in cases in which the wound was closed tight the mortality was less than in those with open chest wounds. Lockwood and Nixon (13) noted that if the diaphragm was injured and not repaired the patient died. This was true also in cases of extensive injuries of the bony skeleton if the comminuted ribs and spicules were not removed.

Tuberculous empyema is usually a complication of pulmonary tuberculosis, frequently developing in its advanced stages. It is obvious then that the prognosis is grave. Buchanan (104) reports on twenty-eight cases of tuberculous empyema with mixed infections. Eight of these were treated by aspiration and twenty by open drainage. Of the patients operated upon, nine died, one recovered and the rest are chronic invalids. Letulle (105) also concludes that the prognosis of tuberculous empyema is very unfavorable.

According to Stevens (107) recurrences of empyema developed after operation in fourteen (25 per cent) of fifty-six cases reported by the Empyema Commission (106) as having healed under simple drainage, and in eight ( per cent) of sixty-seven cases which healed under Carrel-Dakin treatment.

From these statistics we must conclude that empyema requires considerable future study and can no longer be looked upon as a closed chapter in surgery.

#### PROPHYLAXIS

The difficulties of prophylaxis in empyema are exceedingly great on account of the large number of factors which may cause this condition.

In advocating the use of a mixed vaccine of pneumococcus, hemolytic streptococcus, staphylococcus, and influenza bacillus for the prevention of influenza Rosenow (108) stated that only twenty-eight of 481 persons on whom this vaccine was used developed influenza. Cecil and Austin (109) who have given a pneumococcus vaccine to

13,460 troops report that the cases of pneumonia among vaccinated troops were less than half those among unvaccinated troops. Vaughan (49) states that vaccines have proved of no value whatever in influenza. The cases of influenza in the pandemic showed a leucopenia while infection with Pfeiffer's bacillus caused a leucocytosis. It is doubtful whether the etiological factor of influenza is known. Gay (110) was unable to demonstrate any value in vaccines in empyema produced experimentally in rabbits.

According to McCoy (111) the uncontrolled use of vaccines has led to the general impression that they are of value in influenza, but in every case in which they have been tried under perfectly controlled conditions they have failed to influence definitely either the morbidity or the mortality.

McCoy Murray and Teeter (112) studied two groups of 390 persons. In the vaccinated group 119 developed influenza, twenty-three developed pneumonia and ten died. In the unvaccinated group there were 103 cases of influenza, seventeen cases of pneumonia, and seven deaths.

A commission (113) appointed to study vaccine therapy found that it was of no specific value in influenza but also that it had no unfavorable results.

#### TREATMENT

As a rule empyema is a complication of some other disease. It should be borne in mind, therefore, that the associated morbid process (pneumonia) requires appropriate treatment. It is obvious that the treatment of empyema should be secondary to the treatment of a massive active pneumonia. Failure to recognize this basic fact was responsible for the appalling mortality during the pandemic of influenza. Curative treatment for the empyema should be begun only with the subsidence of the active associated lesions. Hygienic measures, nursing, diet, and routine measures are indicated as in any other acute illness. For convenience of description the methods of treatment are described in the following order:

- I. Non-operative aspiration, dyes, chemicals
- II. Operative anesthesia, dyes, chemicals, shock

1. Acute empyema
2. Chronic non tuberculous
3. Tuberculous

The term non-operative is used here to include all methods of non surgical intervention except aspiration. Alsfor (114) reports twenty seven cases treated by aspiration and the injection of gentian violet into the pleural cavity. There

were fourteen urea and eight failures. The bactericidal properties of gentian violet have been determined by Churchman (113). Emilie Weiland and Loysel (114) employed a similar method except that they injected ethylene blue and air into the pleural cavity. Ultimately seven of the twelve cases came to operation. After careful experimental study Gasar (121) Brown (127) has come to the conclusion that there is little certainty of the ultimate usefulness of dressings as disinfectants in bacterial infection. Sherman (128) also voices the old method of injecting a 2 per cent solution of formal glycerine and ether as a decrease the mortality at Camp Sherman from 50 per cent to 5 per cent. In a later communication by the end result in these cases. Dwyer (110) reports that of the fifteen patients reported cured four were lost sight of and the remaining eleven were re-admitted to the hospital within a few weeks for subsequent operation. Marion (120) reports on thirty-three cases treated by repeated irrigation with the potassium permanganate solution in glycerine but was able to effect a single cure obtained by the method above. It is matter of common knowledge that a marked cerebral flow the patient formally in the lower thoracic (119) employs method which may be termed a combined non-operative measure designed to this section and very similar to the method first mentioned by Williams (7).

The lack of former knowledge of the pathology of empyema has given an impetus to the employment of special method of treatment. There are instances in which simple aspiration is a paragon with the infection of an abscess cavity. It is packed with a cure with the number of cases obtained by this method is so small.

Compared with that of other recognized procedures and the chances of producing a chronic condition with permanent secondary changes in other organs (129) and degeneration is great that such new entities cannot be recommended too strongly.

#### OPERATIVE METHODS

**Incision.** A radical approach to the thorax should be employed in all extrapleural operations. Bartlett (122) concludes that in the near future it will be necessary to establish rules for the use of general and local anesthesia. Few major intrapleural operations general anesthesia is indicated, but it must be remembered that the anesthetic may add to the existing pathological chest condition. From a careful analysis of the statistics, Cuthbert (123) has found that one patient in every thirty to fifty operated on

develops a pulmonary complication regardless of the anesthetic used, and one patient in every 150 to 275 dies from such a complication. The presence of sepsis is a factor. Armstrong (124) has shown that in thirty-six of fifty-five cases in which a lung complication developed there was septic focus in some part of the body. Herb (125) reports remarkable results with ether anesthesia properly induced. For major thoracic surgery Lauenstein (126) prefers the intratracheal administration of ether. Carathies (127) concurs with the statement that magnesium sulphate enhances the action of morphine. One-eighth of a grain of morphine in 1 or 2 cubic centimeters of a 25 per cent magnesium sulphate will give a patient ten to thirty hours' rest. It is from two to four hours in the case when it is given in a cube of water. It also relieves shock which is such an important factor in thoracic surgery. Crile and Lower (128) ascribes a marked exhaustion of the central nervous system. Da (129) has shown experimentally that hemorrhage causes the greatest degree of shock after the next greatest, and finally the minimum degree.

**Pneumothorax.** Lehart (130) has shown by careful experiment that open pneumothorax reduces the general exchange of the hydrogen in the carbon dioxide content and the hydrogen in or extraction of the blood and reduces the respiratory quotient. Graham and Peck (131) have proved experimentally the common belief that

in the case of collapse pneumonia a unilateral open pneumothorax normal respiration is maintained in the other lung. It has been shown also that bilateral open pneumothorax in the normal heart is no more dangerous than unilateral pneumothorax provided the total open area on the two sides is not larger than the area of one opening. It is evident then that the pleural spaces must be considered as one unit. Only in old chronic cases in which the mediastinal pleura is very much thickened may the two sides be considered somewhat independent.

Cahoon (132) has shown also that theoretically an opening 5 by 3 centimeters is the largest for which compensation can be established in man. Slaver (133) concludes that the modification due to a small opening so the chest wall is compensated by fixation of the mediastinum. Verbruech (134)

strongly advocates closed thoracic surgery has shown that open pneumothorax causes a fall of degrees in heat after the opening of the chest wall, increases the danger of infection, and results in marked disturbances in the circulation. Norman (135) states that dyspnea due to imperfect alveolar ventilation of the sound lung. According

to Sturvelman and Rosenblatt (136) the accumulation of fluid in the pleural cavity is induced by therapeutic pneumothorax.

It is evident from this research that open pneumothorax affects the opposite lung if firm adhesions are not present or if the mediastinal pleura is not thickened and accustomed to the changes in pressure.

On the basis of treatment Moschcowitz (69) divides acute empyema into three stages: the formative, the acute, and the chronic stage. In the formative stage the more important conditions demanding treatment are the toxicemia, active pneumonia, and extensive pleural exudates. It is obvious that the treatment of the empyema itself should be only palliative. Palliation is best obtained by simple aspiration relieving the compression of the lung.

Stone, Phillips, and Bliss (137) have shown that the mortality was 63.8 per cent in eighty-three cases without preliminary aspiration and 22.2 per cent in cases with deferred operation preceded by aspiration. Stone (64) reports the results of 310 cases in eighty-five cases operated upon early the mortality was 61.2 per cent, and in ninety-four treated by early aspiration and late operation it was 9.5 per cent.

In the formative stage, aspiration alone is indicated. Further mediastine surgery will only increase the mortality rate.

In the acute stage the pus is walled off and the treatment is that of any other abscess.

There seems to be general agreement among surgeons that early aspiration followed by late operation is the method *par excellence*. Lilienthal (38) Aschner (139) Dickenna (140) Ashurst (141) Ramsdell (142) and many others agree that this procedure gives the best results. The chief point of variance is whether the open or the closed method is indicated. Even if the closed method is employed, there is a leakage of air into the pleural cavity after a period of a week or more. Mosborg (143) Phillips (144) Delbet and Grole (145) and many others claim to have had the most excellent results with the closed method. The use of antiseptics in the thoracic cavity is another disputed point.

While a great many good surgeons have reported very excellent results from the use of Dakin's solution (146) acriflavine (147) proflavine (148) crystal violet, and gentian violet (115) there is another group (Moynihan, Leshman, Burghard, and Wright, 149) who believe that the treatment of suppurative wounds by means of antiseptics is "illusory reasoning."

In 1915 Sir Almonro Wright (150) stated that

an antiseptic if ever sterilized a heavily infected wound it would be a matter to announce in all the evening and morning papers. While there is no doubt that it is possible to sterilize the surface of empyema cavities by the Carrel Dakin method (151) the writer is convinced by his experience with this procedure in over 200 cases that it is impossible to sterilize the deeper underlying structures as microorganisms have been demonstrated in the thickened walls removed from empyema cavities so treated.

Excellent results from thoracotomy and rib resection have been reported. On anatomical and physiological grounds (distribution of lymphatics) it appears that rib resection should be the method of choice. The mortality rate as reported by Graham of the Surgeon General is less following rib resection (31.3 per cent) than following thoracotomy (39.4 per cent).

Healing is prevented in empyema by many factors such as foreign bodies (fragments of ribules, and especially lost drainage tubes) incompletely drained simple or multilocular pus pockets, and osteitis of the ribs. Gibbon (152) concludes that if the cavity is thoroughly sterilized it may be sutured and the lung will gradually obliterate it. Petit (153) reports six cases successfully treated by this method after an old sequestrum of the ribs had been excised. Tuffer (154) reports forty-seven successful results from secondary suture after sterilization of the cavity and decortication of the lung. Stoney (155) limits his treatment to sterilization of the cavity and secondary suture.

Delorme (156) classifies chronic empyema cases into three groups: (1) those in which there is no fever and the general condition is good; (2) those poorly drained and febrile; and (3) those with bronchial fistula. In the latter two groups a pleurotomy is performed to bring the temperature to normal, and in a subsequent operation the thickened pleura is removed to allow expansion of the lung. Lilienthal (157) suggests decortication with non-collapsing thoracoplasty which he accomplishes by separating the ribs with a special retractor. He advises immobilization of the lungs if necessary.

Other operations for the treatment of chronic empyema are based on the principle that if the lung cannot be liberated and caused to expand, it is necessary to bring the chest wall to it. The two most important operations of this class are the Eastlander (158) and Schede (159) operations. The so-called Eastlander operation was first performed by Warren Stone, an American surgeon (New Orleans, La.) in 1873 six years before



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causative kin (1870)

Tuberculous empyema has been a well part  
in the return to the Program. I order I  
recognized the fact that surgery is not a solution

Tuberculosis is a fatal disease with a permanent  
infectious with secondary infection (1) the fact  
that 3 tuberculous empyema is a kind of  
part of pulmonary tuberculosis. The frequency of the  
advanced stages of the latter condition, I go  
without saying that the result of surgical treat-  
ment are never promising. Black go may be  
valuable. A rule applies are practical  
useful

### RESULTS

1. In the early stages of empyema the  
associated pneumonia process are the most im-  
portant and a tuberculous empyema treatment.  
If the indications are for operation, be done  
during the first week. Hyperemic treatment, go  
during and proper diet are of great im-  
portance

2. When the empyema has become frank po-  
the pneumonia process has of all  
there has been general improvement. If  
patient's condition, not exactly is not  
to

3. Before the operation the patient should be  
given a fluoroscopic examination and X-  
plates should be made to determine the most  
favorable site for the incision

4. Proper drainage is the most important  
factor in the treatment. Antiseptic may be em-  
ployed, but they never supply a good result in  
some and good surgical practice

5. Negative pressure great (this - 0 milli-  
meters is probably) is as harmful as positive  
pressure

6. A thorough study of the case and stereo-  
scopic plates should be made before any operative  
procedure is undertaken. The removal of foreign  
body such as a lost drainage tube or the im-  
provement of drainage may be all that is neces-  
sary for cure

Decortication without mutilation of the  
chest wall is indicated in all chronic empyema  
which have resisted all simpler means of treat-  
ment. The Ranchoff's division of the pleura is  
often followed by good result

8. Open operations on tuberculous empyema  
are not followed by good result. On account of

the related pulmonary lesion the judgment  
must be of interference

### BIBLIOGRAPHY

1. An abstract of empyema (in thoracic  
surgery) J. Am. Med. Ass. 1911
2. Quoted by MacCallister (1)
3. R. C. C. General Diseases of the Chest. Phila-  
delphia, 1911, p. 10
4. The Lancet. Work of 11 pp. in  
tuberculous empyema 1911
5. MacCallister (1) Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
6. A. C. MacCallister. Emphysema and its  
relation to tuberculous empyema. J. Am. Med. Ass. 1911
7. Transactions of the Program. Abstract 1  
1911
8. General Abstract of the Chest. Phila-  
delphia, 1911, p. 10
9. MacCallister (1) p. 10. Quoted by Black (1)
10. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
11. MacCallister (1) p. 10. Quoted by Black (1)
12. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
13. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
14. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
15. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
16. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
17. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
18. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
19. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
20. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
21. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
22. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
23. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
24. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
25. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
26. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
27. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
28. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
29. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
30. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
31. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
32. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
33. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
34. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
35. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
36. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
37. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
38. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
39. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
40. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
41. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
42. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
43. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
44. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
45. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
46. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
47. C. MacCallister. Emphysema and its relation  
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48. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
49. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
50. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
51. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
52. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
53. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
54. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
55. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
56. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
57. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
58. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
59. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
60. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
61. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
62. C. MacCallister. Emphysema and its relation  
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63. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
64. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
65. C. MacCallister. Emphysema and its relation  
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66. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
67. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
68. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
69. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
70. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
71. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
72. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
73. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
74. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
75. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
76. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
77. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
78. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
79. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
80. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
81. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
82. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
83. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
84. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
85. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
86. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
87. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
88. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
89. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
90. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
91. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
92. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
93. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
94. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
95. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
96. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
97. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
98. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
99. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911
100. C. MacCallister. Emphysema and its relation  
to tuberculous empyema. Abstract 21 (1) 1911

3. GALTIER, McFarland Textbook of Pathology Philadelphia Saunders, 9 9, p 600
33. WILSON, C. Empyema due to caries of the dorsal vertebra. *J Path Soc Phil* 1891 xiv 75
34. WOODBERRY H S Gonorrheal empyema. *Surg Gynec & Obst* 9 4, xxvii, 6
35. OCKER and McCRAE The Principles and Practice of Medicine New York Appleton, 9 p
36. HLOOFIELD A L The serial quantitative method of culture in the study of respiratory disease. *J Am M Ass*, 92 lxxvii, 87
37. SOPER, G A The pandemic in the army camps. *J Am M Ass*, 918, lxxx, 899
38. MATT, P B Laboratory studies in influenza at Camp Dix. *Am J M Sc* 9 9, clviii, 75
39. SMALL, A A Pneumonia at base hospital. *J Am M Ass*, 9 8, lxxx, 700
40. JONES H J Pneumonia at base hospital, 9 8-9 9 *Am J M Sc* 920, clx, 244
41. DAVIS The fate of streptococcus hemolyticus in the gastro intestinal tract. *J Infect Dis* 920, xvi, 7
42. FLEMING, H and LEMMON, P H A Textbook of Bacteriology New York Appleton, 9 p 7
43. BLANTON, W B and LEON, E E A recent epidemic of acute respiratory infection at Camp Center Mich. *J Am M Ass*, 9 8, lxxv, 983
44. HANFORD, W W and MATTHEWS, L H Pneumonia and empyema at Camp Zachary Taylor Ky. *J Am M Ass* 9 8, lxx, 95
45. JOCHIMANN, Streptokokkenempyem. *Lehrbuch der Infektionskrankheiten*, p 37 Quoted by Hanfberger (44)
46. McCULLOUGH, J E Bacteriological observations of the epidemic of influenza at Camp Beale, Maryland, La. *Am J M Sc* 919, clviii, 80
47. JORDAN, E O The etiology of influenza (Discussion, Am Pub Health Ass meeting). *J Am M Ass* 9 8, lxxx, 909
48. HASTORY, L The etiology of influenza (Discussion Am Pub Health Ass meeting). *J Am M Ass* 9 8, lxxx, 909
49. VIGOR, A C Prophylactic inoculation in pneumonia and influenza (Discussion, Am Pub Health Ass meeting). *J Am M Ass* 9 8, lxxx, 909
50. NICOLLE and LEBAILLON *Ann de l'Inst Pasteur* 9 9, xxxiii, 285
51. DEJARRAS de LA RIVIERE *Congr med Acad d Sc Par*, 9 8, clviii, 400
52. OLIVER, P L and GATES, H L Experimental studies of nasopharyngeal secretions from influenza patients. *J Exper Med* 92 xxxiii, 5
53. NICHOL, J W, DYER, J, STAND, F H and BORAS D E Pandemic influenza and pneumonia in large civil hospital. *J Am M Ass* 9 8, lxxx, 90
54. KIRCHMANN F B The bacteriology of the prevailing epidemic. *Lancet* 9 8
55. KIRCHMANN, J J The prevailing pandemic of influenza. *J Am M Ass* 9 8 lxxx 95
56. Influenza in the British Army in France. *Brit M J* 9 8 205
57. SMITH, A J Personal communication
58. DUNNELL, W G Laboratory report on epidemic pneumonia. *Am J M Sc* 9 9 clviii, 6
59. MOTT, I M Report of the Surgical Service, U S Army Base Hospital, Camp Dodge, Iowa, on the epidemic of influenza of 9 8. *Am J M Sc* 9 9, clviii, 244
60. BROOKS and CECIL A study of eighty cases of empyema at Camp Upton. *Arch Int Med* 19 8 xiii, 269
61. SCHUBERT, CLARA ET AL Pneumonia and empyema at Camp Merritt 19 7-918. *Med Rec* 9 9, lxxv, 673
62. BLANK The formation of methemoglobin by streptococcus indones. *J Exper M* 9 6, xlv, 35
63. SNEDECOR, J S and BRIDGEMAN G H Diphtheria bacilli from postoperative empyema. *J Infect Dis* 9 9, lxxv, 9
64. STORV, W J The management of post-pneumonic empyema based upon 3 cases. *Am J M Sc* 919, clviii, 9
65. HELLER, A Ueber subpleurale Lymphdruesen, zu gleich ein Beitrag zur Lehre von den Stauungsleberkrankheiten. *Deutsche Arch f Klin Med* 895 1 4
66. LICHTENBERG Influenza Nothnagel System, Ed 896 p
67. WILLIAMS, A O The present status of empyema. *Am J M Sc* 920, clx, 384
68. ROSENTHAL Nothnagel Spemelle Pathologie und Therapie, Wien, 914 xiv
69. MORGENTHAU A V New conceptions of the pathogenesis and treatment of empyema. *Am J M Sc*, 920, clx, 669
70. LACER, B and BARBER, R Cytological studies of pleural exudates complicating influenza. *Am J M Sc* 9 9, clviii, 373
71. GRAHAM E A The influence of respiratory movements on the formation of pleural exudates. *J Am M Ass* 92 lxxv, 784
72. BLATT, F The Radio-Diagnosis of Pleuro-Pneumonia Affections Yale University Press, 9 8 p 2
73. COLE, R and MACCALLUM, W G Pneumonia at base hospital. *J Am M Ass* 9 8, lxxx, 246
74. LOCKE, WILSON, and KIRK The pathologic anatomy and bacteriology of influenza. *Arch Int Med* 9 9, xiii, 54
75. HANFORD, W W Involvement of the axilla and conduction path, 35 of the heart following influenza. *Am J M Sc* 920, clx, 479
76. STRICKLAND, D The significance of the vascular changes in the so-called pandemic influenza. *New York M J* 9 9, cx, 759
77. STRICKLAND, D, DUNNELL, M and FROST, A D Difference in pathology of the pandemic and recurrent forms of so-called influenza. *J Am M Ass* 920 lxxv, 646
78. GAY, H Pneumonia and empyema. *Boston M & S J* 9 9 clxxx, 265
79. THOMAS, H M J Rupture of encapsulated empyema into the pleural cavity. *J Am M Ass* 9 9, lxxx, 29
80. REIL, T F An unusual pain syndrome associated with the present wave of influenza. *J Am M Ass* 92 lxxv, 403
81. BERGLUND, W L, LOGG, C B and BURR, C W Streptococcus pneumoniae and empyema, an infection affecting eight members of one family with seven deaths. *J Am M Ass* 918, lxxv, 1473
82. WENZEL, H The diagnosis of encapsulated pleural effusions. *Med Clin N America*, 920, iv 69
83. PERROT An obscure case of empyema. *Cleveland M J*, 9 7 xv 788
84. FOOT, A H Empyema communicating with the left psoas muscle and passing into the vertebral canal. *Proc Path Soc Dublin*, 1874, 98



- 36 SHYELMAN, B. P. and ROSENBLAT, J. Multiple fluid collections in the chest in the course of therapeutic pneumothorax. *Am J Sl Sc* 9 clii, 229
- 37 STOVE, W. J. PHILLIPS B. G. and BLISS W. P. A clinical study of pneumonia. *Arch Int Med* 9 8, xxi, 409
- 38 LILIENTHAL, H. Empyema of the thorax. *Ann Surg* 9 7 lvi, 200
- 39 ASCHNER, P. W. Acute empyema of the thorax treated by minor intercostal thoracotomy. *Surg Gynec & Obst* 9 20, xix 54
- 40 McKENNA, H. Operation for empyema. *J Am M Ass* 9 9 lxxi 743
- 41 ASHURST A. P. C. Observations on empyema. *Ann Surg* 9 20, lxxii,
- 42 RAYMOND, J. Empyema at the Cincinnati General Hospital during the influenza epidemic. *J Am M Ass* 9 20, lxxiv 238
- 43 MORRIS, A. E. The surgical treatment of empyema by closed method. *J Am M Ass* 9 8, lxxi, 206. *Am J M Sc* 9 clii, 670
- 44 PHILLIPS, H. B. Empyema, with special reference to the use of the Philips empyema apparatus. *J Am M Ass* 9 9, lxxii, 274
- 45 DELBERT P. and GOSCOE, G. Traitement des pleurésies purulentes par le drainage étanche et l'aspiration continue. *Rev de chir Par* 9 20, lxxvii,
- 46 D'UN COMTE, DUFFREY, L. KERRIO. Antiseptic action of substances of the chloramine group. *Proc Roy Soc Lond* 9 6, lxxix, 3
- 47 BROWNE, C. H. and THORNTON, L. H. Analgesic properties of acetanilide and its use. *Brit M J* 9 7 70
- 48 CARLEA, R. B. and TEMPLETON, W. Acetaminophen and profavine. *Lancet*, 9 8, May 24, p 634
- 49 MOTYCHA, LEISTMAY, BURGHARD, and WRIGHT. Quoted by Carrel and Debelly
- 50 WRIGHT, A. An address on wound infections. *B 1 M J* 9 5 p 11
- 51 Review of War Surgery and Medicine. Surgeon General Office 9 9 Vol No 5
- 52 GORDON, J. H. The non-operative treatment of chronic empyema. *Am J Sl Sc* 9 7 cliii, 469
- 53 PETIT, R. Deux cas des fistules pleurales près pleurésie purulente déinfectée au Dakin et suturees secondaires. *Bull et méms Soc de chir de Paris*, 9 9 xlv 77
- 54 TURPIN, F. Traitement des épanchements purulents de la plèvre. *Presse méd Par* 9 8, xxi, 497
- 55 STOVE, R. A. Modern treatment of empyema by antiseptics. *Brit M J* 9 9, 2, 95
- 56 DELORME, E. De la décontamination pulmonaire dans les pleurésies traumatiques consécutives aux blessures de guerre. *Bull Acad de méd Par* 9 8, lxxii, 4
- 57 LILIENTHAL, H. Empyema—a syllabus of operative treatment. *Ann Surg* 9 20, lxxi 57
- 58 ESTLANDER, J. A. Résection des côtes dans l'empyema chronique. *Rev mens de méd et chir* 879 iii, 37
- 59 SCHMIDT, M. Die Behandlung der Empyeme. *Verh d 9 Cong f inn Med* 890, ix, 4. *Abst Therap Monatsh* 1890, 75
- 60 BRICK, E. G. The empyema problem. *Surg Gynec & Obst* 9 9, xlvii, 379
- 61 FOWLER, G. R. Thoracic surgery in the battlefield. *Ann Surg* 891 54

# ABSTRACTS OF CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

### ANESTHESIA

Droener, L. Conduction Anesthesia in the Leg  
(Ueber Leitungsanästhesie am Bein) *Zentralbl f Chir* 92: 212, 76

Droener exposes the sciatic nerve with 0.5 cc of a 0.25 per cent solution of novocaine and anes- thetizes it with 0.5 cc of a 1 per cent solution of novocaine. At second operation the femoral nerve is exposed with the same amounts of the same solutions. The obturator nerve is charged with 0.5 cc of a 1 per cent solution through the wound. The lateral cutaneous femoral nerve is infiltrated through the skin with 10 to 20 cc of a 0.5 per cent novocaine solution. Anesthetization of the ilio inguinal and iliohypogastric nerves may also be necessary.

Droener has induced anesthesia in thirty three cases in this manner but he does not consider his technique any better than the Schleich and Crie methods. The Woodhouse procedure is dangerous because of the extremely large dosage used.

KLEINKAUF (2)

Koenig, F. Experiences in 600 Cases of Local and Conduction Anesthesia (Erfahrungen an 600 Fällen von Lokal und Leitungsanästhesie) *Deutsche Zeitsch f Chir* 9: 212, 77

For injection anesthesia, as the author designates local analgesic and lumbar anesthesia, novocaine B tablets are used at the Woernberg clinic. Tropo- caïne is employed only for lumbar anesthesia. The question as to the best dosage of novocaine is still undecided.

In the 600 cases reviewed there were only twenty six failures (4.3 per cent). These included lumbar paravertebral and paracranial anesthesia, and episch- nic anesthesia induced by the technique of Happee or Mulley. When induced in the proper indications and with a correct technique, injection anesthe- sia will take the place of general anesthesia.

In discussing its dangers Koenig states that con- siderable cardiac and circulatory disturbance is present in twenty-seven cases (4.5 per cent). 1 cases of lumbar and paravertebral anesthesia there were two deaths, but in the author's opinion these could not be attributed to the procedure. Slighter cardiac symptoms appeared in 10 cases. Marked respiratory disturbances occurred once when the Mulley technique was used and once in paraverte- bral anesthesia with temporary arrest of respiration. In fifteen cases, seven of which are those of chil- dren, there was marked excitation. Vomiting oc-

curred in twenty one cases (five times in abdominal operations). Vertigo, headache and sweating were sequelae in only one case. In one case of strabism in which paracranial anesthesia was induced there was collapse with Cheyne-Stokes breathing but the patient recovered. In certain cases of arteriosclerosis and operations for hernia secondary hemorrhage occurred. Pleurus anesthesia was oc- casionally followed by long-continued paralysis.

Conduction anesthesia causes less shock than general anesthesia. Only thirteen patients left the operating table in very poor condition, and of 517 who had been subjected to an extremely painful operation only three are in poor condition. Aspara- thesia is avoided. The resulting local anesthesia sim- plifies operations on the skull and lower jaw and easier operations. The injection and circumplexions are harmless, being comparable to the first stage of ether and ethyl chloride anesthesia. Anesthesia of the trigeminal nerve and the nerves of the ex- tremities is quite harmless, but in paravertebral, pleurus, and apical anesthesia there is danger of laceration and secondary injuries. Lumbar anesthesia is applicable only in diseases threatening life.

KLEINKAUF (2)

Jonnesco, T. A New Technique for General Spinal Anesthesia (Une élle technique de la rachianesthésie générale) *Presse méd. Par* 9: 222, 77

Since 1903, a total of 5,016 operations (1,765 high and 3,250 low) have been performed in Jonnesco's clinic under spinal anesthesia without any deaths and without any severe immediate or late complica- tions. To these Jonnesco adds similar operations by others, which brings the total to 3,221 opera- tions (1,031 high and 2,190 low) with only 15 fatalities.

Jonnesco is convinced that, as the result of the new technique he describes in this article, general spinal anesthesia will soon become the method of choice. It is applicable to all cases and operations. It is simple and easy, and demands no previous preparation of the patient. The equipment required consists of only a fine 6 cm. needle, hypodermic injection syringe, and an ampulla containing the anesthetic solution. The spinal puncture, high or low, is made very easily. The method is rapid since the puncture can be made and anesthesia follows in about five minutes. Apart from its technical ad- vantages, spinal general anesthesia has also the ad- vantage of precision as it is regional and segmental and its effects can be limited to the nerve root selected with almost mathematical exactness.

The first change made by Jonnesco in his original method was the addition of strychnine to novocaine. Since 1911 he has added caffeine also, but since May 1921 has omitted the strychnine and doubled the caffeine. The employment of the new mixture has necessarily modified the technique slightly and in certain types of operation the puncture point has been changed.

W. A. BREVET

Scholl, A. J., Jr. Further Experiences in Sacral Anesthesia in Urology. *California State J. U.* 1922 XI 4 3

There are two common methods of anesthetizing the sacral nerves, viz the injection of novocaine solution into the main central canal through the caudal foramen, and the individual injection of each nerve as it leaves the lateral sacral foramen.

The caudal injection is satisfactory for most operations on the perineum or external genitalia, and for practically all endovaginal procedures. A single caudal injection however requires twenty minutes to induce complete anesthesia. A further disadvantage of the method is that in from 1 to 3 per cent of the cases the resulting anesthesia is not complete.

When the lateral nerves are injected individually there is almost immediate anesthesia of the area involved and failures are unusual, but it is much more difficult to inject the nerves as they leave the canal than to make the single caudal injection, and the contact of the needle against the peristome or the occasional sticking of the nerve causes pain.

In discussing his technique Scholl states that the novocaine solution is prepared fresh for each case. As a rule, 30 ccm. of a 1 per cent solution of novocaine bicarbonate solution are used. In the cases of children and adults with reduced vitality the dose is decreased. The most satisfactory results have been obtained with 11c2c novocaine this is kept in powders with enough sodium bicarbonate to make 30 ccm. of a 1 per cent solution sodium bicarbonate, 0.15 gm sodium chloride 1 gm and novocaine 0.6 gm.

Caudal injections give very satisfactory anesthesia for urological examinations and treatment. The wall of the bladder is completely relaxed and the bladder distended. Such relaxation with absence of pain and straining permits the operator to carry out a thorough unhurried examination of the bladder and ureters.

In certain conditions, such as severe cystitis and pyelonephritis, caudal injections have been given in order to facilitate drainage of the renal pelvis. In one case ten such injections were given in seven weeks.

The reaction following cystoscopy in severe cases of cystitis is frequently due to voluntary muscle spasm around the cystoscope, especially in the region of the neck of the bladder this does not occur after sacral anesthesia. In a number of cases of pyelonephritis and severe cystitis in which periodic renal lavage was given the treatment was at first carried out under caudal anesthesia but later merely with urethral cocaineization. The convalescence in these cases was invariably much smoother and easier when caudal anesthesia was used. In several instances, patients refused to submit to cystoscopy without caudal anesthesia.

LOREN GROSS, M.D.

Wideroe, S., and Dahlstrom, S. The Dangers of Lumbar Anesthesia (*Les dangers de l'anesthésie lombaire*). *Acta Chir. Scand.* 9 IV 7

A review of the literature on intraspinal lumbar anesthesia reveals the fact that of all the dangers associated with the method, respiratory paralysis is the most common and most frequently fatal. Such paralysis may occur immediately after the injection or hours or days later.

Air or various dyes injected into the spinal canal in the lumbar area reach the cerebral ventricular system within a few minutes. The authors believe that the drug injected for anesthesia reaches the fourth ventricle and produces a depressant effect upon the respiratory center.

LOYAL E. DAVIS, M.D.

## SURGERY OF THE HEAD AND NECK

### HEAD

Zelrowski, A. Malignant Tumor of the Temporal Bone. *Ann. Otol. Rhinol. & Laryngol.* 9 1920, 739

Malignant tumors of the temporal bone are exceedingly rare. The author has had three such cases. In the third case a radical mastoid operation as performed for chronic otitis media and mastoiditis with rapid growth of the tumor and subsequent death. The history of this case is reported in detail.

At autopsy a diagnosis of canceroid originating in the epidermis of the middle ear was made. Metastases was limited to the glands in the immediate vicinity of the temporal bone.

In none of the cases reported by the author was a radical mastoid operation successful, and only two cases reported in the literature were cured by this procedure.

Early total resection of the temporal bone including the pyramid, has been performed in three cases, successful result being obtained in one. The most difficult step in this procedure is the freeing of the dura.

The author recommends a radical mastoid operation with ligation of the carotid artery and the jugular veins and removal of the glands to be followed several days later by a second operation for the removal of the entire temporal bone.

MARSH H. HOWARD, M.D.

Wicks, B. I. Shall W. Decompress for Choked Disk? *Arch. Neurol. & Psychiat.* 52: viii, 33

Of late years Sack has lost faith in the efficacy of decompression for choked disk.

One hundred and forty brain tumors were studied. Of these forty-five were completely unlocalized and ninety-five localized during the period of examination. The table shows the relationship of choked disk to the site of the tumor.

CHOKED DISK IN VARIOUS LOCATIONS OF TUMORS

	number of cases	Choked disk	No choked disk
Frontal			
1. sup. frontal			
2. central			
3. inf. frontal			
4. parietal			
5. occipital			
6. cerebellar			
7. brain stem			
8. cerebellar			
9. spinal cord			
10. meninges			
11. blood vessels			
12. other			
Total	140	45	95

In series of thirty-eight cases decompression was performed for the relief of choked disk. In seven cases the site of the tumor remained wholly unknown. In all nine cases showed no recession of the optic chiasm during prolonged observation. In four cases there was distinct improvement. In seven cases showed slight recession. In six of these only nine cases showing no recession optic atrophy was evident. In the others optic atrophy was not developed at a later period. There may be some satisfaction as to any tumor retained, but this does not prove that decompression promotes recession of choked disk.

When the presence of a tumor of the cerebellum or of the cerebellopontine angle was suspected the suboccipital region was chosen for the decompression.

Choked disk does not necessarily indicate the presence of neoplasm of the brain, and sometimes it recedes spontaneously.

(Case R. 11-12, M.D.)

Gordon, A. Unusual Peculiarity of Symptom in Some Cases of Pontocerebellar Tumors. *Int. J. Surg.* 1: 1, 1905

Special localizing symptom of neoplasms developing in the pontocerebellar angle as described in detail and seven cases are reported in which the symptoms were again noted later in the course of the pathologic condition. The article contains also illustrations of the seven brains.

Five of the seven cases the increased intracranial pressure failed to produce changes in the ocular fundi. In the remaining cases the changes appeared only a short time before death. A positive sign common to all is error in the pointing reaction. In four cases the head was inclined

toward the side of the tumor and then an attempt was made to turn it to the opposite side. The patient complained of headache and dizziness. Nausea in at least one case. In only two cases loss of the patellar reflex. In the latter test C. R. Miller, M.D.

Dickie, J. A. M. A Contribution to the Study of Brain Abscess. *Ann. N. Y. Acad. Sci.* 1905

The author reviews sixty-seven cases of pyogenic brain abscess collected from the literature and reports a review of cerebellar abscesses and cases of temporary hemispheric abscess.

From 1914 to 1918 in the Edinburgh Infirmary the frequency of brain abscess associated with the middle ear is 15 per cent. Intracranial complications occur more than twice as often chronic otitis media as in the acute condition.

The first case introduced by direct entry as the high the tympanic membrane, which is the most common in cases of temporoparietal abscess, or by middle ear abscess in the head.

In about half the cases of temporoparietal abscess there are no complications, but in those of cerebellar abscess complications were almost constant.

The number of the cases in which the condition followed an injury to the head or in which operation suggests that trauma may be a localizing factor. In certain cases however abscesses had disappeared after the last operation.

There was no symptom of brain abscess that is not at a pathogenic and setting are more than few of the symptoms present in any one case. Three phases were generally noted: (1) an initial stage of encephalitis; (2) middle stage of cerebellar abscess; (3) terminal stage of abscess. Some of the more important or common symptoms are: headache (present in fifty of the seven cases); mental disturbances of various kinds; vomiting only in the second and final stages; vomiting chiefly in the first stage; fever (generally absent in cerebellar abscess but sometimes present in cerebellar abscess); obstinate constipation, particularly when the pressure becomes great; optic neuritis occasionally present in cases with pressure; loss of consciousness; papillary changes; subnormal pulse; respiratory changes; leucocytosis; increased cerebrospinal fluid pressure; and local tenderness noted in tapping over the region of the abscess.

Temporoparietal abscesses also show localizing symptoms such as jerking of the upper limb, convulsions, and paresthesia.

Cerebellar abscess has many more localizing signs than temporoparietal abscess. Among these are: 1. Tinnitus; 2. vertigo; 3. lack of muscular tone; 4. intention tremor; 5. repeated vomiting; and 6. rigidity of the muscles.

The case of cerebellar abscess reported as that of a boy of 7 years who had had draining

our all his life. Mastoiditis developed some time after blow on the ear followed by exposure to cold wind five days later. Operations on the mastoid and cerebellar region resulted in complete recovery.

In the case of temporosphenoidal abscess the condition was due to chronic otitis media. Operation was followed by death. Autopsy revealed a large abscess.

In conclusion the author states that brain abscesses can be detected by repeated careful neurological examinations and that every patient should be given such an examination before he is subjected to radical mastoid operation.

MARION H. HOBART, M.D.

New, G. B. The Delayed Pedicle Flap in Plastic Surgery of the Face and Neck. *U. S. Naval Medical Journal*, 1921, 7.

The pedicle flap found most satisfactory by New is the so called delayed flap which he first saw used by Blair. Dr. New claims that Croft first advocated the application of this flap. It is employed also by Tagliacozzi.

The delayed flap is outlined and elevated from the surrounding tissue as if it were to be transferred and is then returned to its wound and resutured in its original bed. The sutures are separated sufficiently to allow oozing between them. Firm pressure is applied by means of gauze and adhesive plaster for at least a week to hold the flap in place and to prevent the collection of blood or serum underneath.

If the length of the flap makes the blood supply to the distal end questionable the flap may be left attached at both ends and the distal pedicle cut off in a week or ten days. The cutting of the pedicle should be done a little at a time rather than all at once. In ten days or two weeks from the time the flap is first elevated it may be transferred to the defect. This is readily accomplished without anesthesia, the area around the defect alone requiring excoriation. Although the method necessitates an additional step in the operation, it insures the blood supply and usually prevents the loss of any of the distal end of the flap.

The use of the delayed flap is recommended by the author also for the closure of non-operative openings in the palate and for the closure of wide cleft palate.

Where the delayed flap is transferred the skin is thin and flattened like normal skin. Therefore the dissection of the core of the tissue as in the tubed flap of Gillies is unnecessary. If a double epithelialized flap is required to fill a defect in the nose or cheek.

Thiersch graft, with its raw surface up, may be placed in the wound where the flap has been elevated. In suturing the flap the needle is passed first through the flap, then through the Thiersch graft, and then through the margin of the skin.

The results of this method of treatment are shown by several illustrations.

## NECK

Dubs, J. Clinical Experiences in 840 Operations for Goiter with Special Consideration of Recurrent Goiters and Operations for Recurrence (Klinische Erfahrungen bei 840 Kropfoperationen mit besonderer Berücksichtigung der Kropf-Rezidive und Remi-Operationen). *Schweizerische Monatsschrift* 93, 11, 90-93.

The author set himself the laborious task of going through the goiter material of the Kantonsspital Winterthur for the years 1914 to 1921. During this time, 844 patients were operated on. In the first half of the period the unilateral operation was practiced almost exclusively but in the succeeding years the bilateral procedure was done with increasing frequency (5 unilateral and 58 bilateral operations).

For anesthesia, the second Eulenlambert modification was used with the best results. In 260 sternotomies the wound was completely closed without drainage and in these cases there was less disturbance of wound healing than in the drained cases. If a sufficient capsular covering of the stump of the parenchyma cannot be achieved, the previously described muscle covering is used. This prevents not only the formation of hematoma but also the formation of serum.

The thorax saw hemipectus of the thyroid gland in only seven cases. In one case cachexia thyrotoxa followed an operation performed by another surgeon. One case of postoperative tetany was cured by transplantation.

With regard to injuries of the recurrent nerve, Dubs states that every patient with goiter should be examined with the laryngoscope before operation and on discharge. In the cases reviewed the recurrent laryngeal nerve was not exposed in the dissection. Permanent lesions of this nerve resulted in 9 per cent. Squeezing injury of the nerve resulted in permanent paralysis in four cases in spite of the fact that the nerve was not cut and was grasped only momentarily.

The material of 1914 to 1919 was studied with regard to the recurrence of goiter. Only cases in which the patient was re-examined (255) were included in the investigation. Every regrowth of the goiter which was visible and palpable was counted as a recurrence. Only 44.7 per cent of the patients were found free from recurrence.

Hemistruumectomy has been rejected in the author's vicinity because a recurrence develops in 67 per cent of the cases so treated. Even when the goiter is distinctly unilateral the unilateral operation is insufficient. Dubs believes that while the ligation of the four arteries does not prevent recurrence with absolute certainty, it limits it to great extent. He is unable to draw definite conclusions on this point from the cases he reviews, however as only four of the patients who were subjected to ligation of all four arteries returned for examination.



Operations for recurrences were done in 6 per cent of the cases. More than half of the patients who were operated on once for recurrence developed another recurrence. Because of his conviction that there are goiters which cannot be entirely cured by surgery, Dubs recommends prophylactic treatment with iodine following operation.

## HALLING (2)

Klose H., and Hall Jg. A. Recurrence of Goiter (Ueber Wiederholungen) *Klin. Wochenschr.* 9, 1, 1935

The authors review from the standpoint of recurrence 11 cases of goiter operated upon by the classical methods and followed for five to eighteen years. A recurrence developed in 40 per cent and an operation for recurrence was performed in 55 per cent. Most of the recurrences developed between the twenty-first and twenty-fifth years of age.

Recurrence is dependent less upon the type of operation than upon the character of the goiter. The small nodular tumors and the diffuse colloid strumae show a particularly strong tendency to recur. According to the authors, the cause is too cautious resection in these forms of goiter. Therefore in the selection of the operative procedure the function of the thyroid must be taken into consideration. Resection should be as radical as possible in cases of hyperthyroidism and less extensive in cases of hypothyroidism. KROHN (7)

Okada H. The Treatment and Prognosis of Carcinoma of the Larynx (See Also Abstr. of Laryngol. 9, 2, 1936)

An experience with over 400 cases extending over a period of twenty years, and a study of 4 cases operated upon constitute the basis of this interesting article.

In practically every early case of laryngeal cancer in which the disease is limited to nodular lesions of

the vocal cord and there was no involvement of the ventricular membrane or fixation of the cord, the author obtained permanent cure by endolaryngeal operation, with or without the use of suspension laryngoscopy. These cases, however, numbered only thirteen. Absence of involvement of the trachea is demonstrated by the use of the author's ventricular laryngoscope. After the tumor has been removed surgically the spot should be thoroughly cauterized with the galvanocautery or treated by an application of radium.

In all cases with involvement of the ventricular membrane or muscles, tracheotomy with a preliminary tracheostomy as performed according to the suggestion of Chien and Semon but with only fair results.

Extirpation and partial extirpation of the larynx, although indicated by the appearance and location of the tumor proved impractical. Mass laryngeal carcinomata are too extensive for such simple procedures. Nothing less than a total extirpation of the larynx under strict asepsis has proved of any avail. The author removes the larynx from below upward, amputating below the ring cartilage by cutting slanting upward from front to back. He then sews the lower tracheal end into the skin and completes the removal of the larynx, repairing torn tissues immediately. He removes also all regional lymph glands and ducts.

Of 106 cases operated upon in the manner described, many of which were not good surgical risks, thirty-two showed no recurrence after three years and fifty-five were cured. Of ten recurrences, three were cured by reoperation, the rest were glandular recurrences, some of which could have been clearly cured by reoperation. In six cases death resulted from other causes within four weeks after the operation.

Chloroform is the anesthetic of choice, but six cases were operated upon successfully under local anesthesia. M. THOMAS H. CORRIE, M.D.

## SURGERY OF THE CHEST

## CHEST WALL AND BREAST

Hild, J. K. Bleeding Breast (with Few Cases) Statistics from the Dr. Dittmar Hospital (Ueber blutende Mammas mit einer kleinen Krebsstatistik aus dem Krankenhaus Dr. Dittmar) *Verh. Dtsch. Ges. f. Gyn.* 9, 1935, 31

In 10 cases of bleeding breasts are reported. The first as that of a widow 45 years old, the mother of four children, whose left nipple had secreted some what bloody to bloody serous fluid during the last half year. A tumor as demonstrable on palpation. The amputated breast showed dilated milk duct and a bean-shaped, pedunculated, papillomatous tumor beneath the nipple. Several smaller and similar intracanalicular tumors were seen in the vicinity. The microscopic examination showed

structure somewhat similar to that of adenocarcinoma, but without any infiltrating growth.

The second case is that of a woman 18 years old who had given birth to 1 children. The left nipple had dripped blood for six weeks and tumor the size of a nut had grown to the size of mandarin. Microscopic examination revealed carcinoma.

From 1891 to 1931 10 cases of cancer and thirty-three cases of benign tumors of the breast were treated in the Dr. Dittmar Hospital. Among the cases of carcinoma there was only one with bleeding from the breast. In eight cases it was probable that benign tumor had undergone malignant degeneration. From 1891 to 1931 there were thirty cases of ulcerating carcinoma in which the average period of observation of the tumor was fourteen months, while from 1931 to 1935 there were

thirteen cases with period of observation of nine months.

A bleeding breast is a rare condition. The bleeding may be vicarious menstruation or due to inflammation of the breast or a neoplasm. Benign tumors causing hemorrhage are cystadenomata and intracanalicular papillomata. Hemorrhage is frequently the only sign of the latter. Bleeding occurs in only 1 to 9 per cent of the cases of malignant breast tumors, but as malignant tumors are far more common than benign tumors, hemorrhage should suggest the presence of carcinoma.

If the cause of the bleeding is a neoplasm, the treatment should always be operative as a benign tumor may undergo malignant degeneration.

KORTVERK (Z)

Lee B. J. The Treatment of Recurrent Inoperable Carcinoma of the Breast by Radium and the Roentgen Ray. *J Am Med Ass* 9 2, 1917, 574

This article reports the results of a study of recurrent mammary cancer treated in a breast clinic during the years 9 8 9 9, and 9 90. Practically all of the 28 patients have been traced to the present date. The object of the study was to determine whether or not radiation treatment of recurrent carcinoma of the breast is justified by the results.

Only six of the 28 cases could be considered fairly as operable. Ninety-four were so far advanced at the time of admission that they were obviously hopeless from the outset. Of the 24 patients in whom favorable results from irradiation might be expected, thirty-one (25 per cent) were alive at the time this report was written, and of these, the condition of twenty-two is good while that of nine is poor.

In the cases treated by irradiation following the appearance of recurrence, the average length of life after recurrence has been two years and four months. This compares very favorably with a series of cases observed at the New York Hospital. The length of life after recurrence following radical amputation without subsequent irradiation was six and one-half months. While the author is cognizant of the varying course of different types of breast cancer, he believes that the results cited indicate that irradiation is of definite value.

In general, the more cellular the tumor, the better its response to treatment by irradiation, and the younger the woman and the more rapid the recurrence, the poorer the result of irradiation.

Small localized lesions in the intracanalicular region or adherent to or on the chest wall, small localized skin metastases, and small accessible nodes are most amenable to treatment by radium. The recurrences which are best treated by the roentgen ray include diffuse cutaneous involvement, the so-called inflammatory carcinoma, extension of involvement of nodes in the axillary or supraclavicular regions, mediastinal and pleural metastases and bony metastases.

A study of the cases in this series leads the author to the following conclusions:

1 A careful selection of patients for operation must be made as a precaution against the recurrence of breast carcinoma.

2 Pre-operative and postoperative cycles of roentgen-ray treatment are important prophylactic measures against recurrence.

3 A follow-up of every case of carcinoma of the breast operated on should be adopted as a routine.

4 Irradiation properly applied to recurrent breast carcinoma definitely prolongs life.

5 With more complete knowledge and better technique, further control of the recurrent phase of this disease may be expected.

ADOLPH HARTUNG, M. D.

Sittonfield, M. J. Does Radiation Enhance Post-operative Recurrence of Carcinoma of the Breast? *J Radiol* 9 11, 476

Surgical statistics indicate that surgery alone is far from satisfactory in the treatment of carcinoma of the breast. Over 70 per cent of the patients thus treated do not survive the five year period and most of those who do had early localized tumors without glandular involvement at the time of operation. Of those with axillary or other lymph-node involvement less than 30 per cent survive the five-year period. It is the latter type of case particularly which should be given the benefit of whatever additional treatment may improve the ultimate results.

Marked discrepancy in the results reported by various authorities relative to radiotherapy plus surgery in the treatment of breast cancer induced the author to make a critical study of seventy-three cases thus treated under his care. His clinical observations since the introduction of the modern technique of intensive radiation within the past twenty months has impressed it upon him that pre-operative or postoperative radiation with proper technique will greatly improve the end results. Of the seventy-three cases, fifteen were given pre-operative radiotherapy and twenty-three postoperative radiotherapy. Of these thirty-six were arrested clinically and the other two were favorably influenced. Twelve cases of recurrence following operation showed clinical arrest of the condition in nine and no favorable influence in one. Two of the patients died. In fifteen cases there were distant metastases following the operation, three of these patients showed clinical arrest of the condition, three were not benefited, and nine died. Of eight patients who were inoperable when first seen four showed a clinical arrest of the condition, two were rendered operable, and two died.

From this brief clinical report it is obvious that though it has not given a clinical cure in every case pre-operative and postoperative radiation has exerted a most beneficial influence. The argument advanced by the advocates of postoperative radi-

up half pint of blood. The patient did not appear ill. In the lower right axilla and back there was percussion dullness associated with diminished vocal fremitus, harsh breath sounds, and prolonged expiration. There was no pain or dyspnea. The temperature was 102 degrees F, the pulse 120 and respiration 4. Hemoptysis occurred on three consecutive days. On the third day the breath became foetid and the physical signs at the right base were more pronounced. The daily temperature ranged from 100 to 103 degrees F. The microorganism in the official sputum were chiefly streptococci and micrococci catarrhalis. A patch of atelectasis was located in the right base. The X-ray revealed no foreign body but showed an irregular opacity in the lower two-thirds of the right lung suggesting a cavity. The right chest scarcely moved with respiration. The patient gradually grew weaker and died twenty-seven days from the time of her admission to the hospital.

At autopsy the congested left lung showed collapsed patch near the apex. The right pleural cavity full of dark-brown, slimy fluid containing fragments of disintegrated lung. Only the lower part of the right lung remained and this was gangrenous except for few areas which were solid and gelatinous. There were no adhesions or enlarged lymph glands. A small sinus from the right side of the lower end of the oesophagus led into the gangrenous mass in the right pleural cavity. No foreign body was found. The liver and myocardium showed cloudy flaccid.

Case 2 was that of a man aged 45 years who complained of dyspnea and pain in the right chest. During the past six years he had had bronchitis and emphysema and on several occasions had been

treated in a hospital. Five years previously he had had fits accompanied usually by hemoptysis and on one occasion by vomiting. There was always considerable spitting, which sometimes was blood stained but did not contain tubercle bacilli.

At the time of examination the patient's temperature was 100 degrees F, his pulse 100, and his respiration 33. Clubbing of the thumbs and advanced phthisis were noted. The urine contained considerable quantity of albumin. Rales were heard over the entire chest, and expiration was prolonged.

The patient expectorated daily about 6 oz. of sputum which showed pus cells, streptococci, and micrococci catarrhalis. Six days after his admission to the hospital he had an attack of hemoptysis and died.

Autopsy revealed in the oesophagus, opposite the bifurcation of the trachea, a small puckered area, across which narrow fibrous bands were stretched. Behind the bands a small opening led downward into the right bronchus just beyond the tracheal bifurcation. There was no sign of surrounding inflammation. The trachea and bronchi contained large quantity of coagulated blood. At the base of the right lung were dense pleural adhesions. The left lung was emphysematous and the lower lobe showed edema and congestion. The upper right lobe contained an abscess surrounded by consolidated and partly necrotic lung. Near this abscess were a group of particles which analysis showed to be cadaverium (possibly a tooth filling). Elsewhere the lung tissue was congested but not consolidated. There was no tuberculosis. Both kidneys showed subacute glomerulonephritis.

WALTER C. BROWN, M.D.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

Goyt, R. The Anatomy and Surgical Bearing of the Nerves Found in the Abdominal Wall. *Lancet*, 9, col. 615.

The anatomical distribution of the abdominal nerves leaves less certain areas where abdominal closures can be made with little danger of nerve injury. In entering the abdominal wall the nerves leave a space of 4 in. above the first trunk on each there is no large nerve, an ideal space for the incision for gall bladder operation. The incision may be made obliquely from the inner costovertebral angle for distance of 4 in. without danger of injuring any large nerve. If necessary it may be continued outward in further in which case only one nerve trunk, the seventh intercostal, will be cut.

After passing the rectus sheath on its outer border the nerve passes into the external oblique muscle its center. Therefore the incision may be made vertically through the inner half of this muscle without injury to the nerves. Such an incision may be

used for appendectomy. Because of its almost horizontal position of the low nerves, the appendix can be approached also through an incision beginning near the antero-superior spine and curving upward and downward in the form of crescent.

Excellent exposure for plumbectomy can be obtained without nerve injury by making on the left side an incision similar to that for gall bladder operation and vertical incision from its inner end down the middle of the abdomen.

MARCELL H. HENRY, M.D.

Wooden, R. R. Radical Operation for Femoral Hernia with the Aid of Active Muscular Closure (Radikalooperation des Schenkelhernies mittels eines aktiven Muskelverschlusses). *Practisch-Chirurgische Blätter*, 1921, 1, 8.

In radical operation for femoral hernia Wooden's aim is to restore active muscular closure of the femoral ring. The region of the crural canal is exposed by a V-shaped incision with its apex over the pubic symphysis. After freeing and resection of

the hernial sac, a strip with a lateral base is dissected from Poupert's ligament, drawn under the pectineal muscle, and sutured to the symphysis. A row of sutures joining the lower border of Poupert's ligament to the pectineal muscle is then inserted. When the muscles of the abdomen or of the thigh are then brought into play, the femoral ring is closed by the restored pectineus abdominalis muscle connection.

The author has operated successfully by this method ten times. FERNOW (Z)

**Bellettsdall, H.** The Radical Operation for Inguinal and Femoral Hernia with Plastic Use of the Uterus through the Abdominal Cavity and Simultaneous Laparotomy for Another Condition (Die Radikale Operation von Leisten- und Schenkelhernien mittels plastischer Verwendung des Uterus an der Bauchhöhle aus, bei gleichzeitiger Laparotomie aus anderem Grunde). *Zentralbl. f. Gynäk.* p. 214, 215.

In accordance with the suggestion of Freund, the author utilizes the uterus in the operation for plastic closure of the femoral ring through the abdominal cavity. The uterus is mobilized by means of the vesico-uterine fold, pushed to the side, and sutured as pad in front of the internal femoral ring. As preliminary procedure the internal femoral ring is sutured, the hernial sac being left intact.

Similar methods for the treatment of femoral hernia through the abdomen were originated by Oehlerker, Mladetzer, and Meyer and are described for comparison. KALIS (Z)

**Souttar H. S.** The Operative Treatment of Difficult Hernia. *Brit. Med. J.* p. 21, 22.

To close the orifice of a hernia Souttar uses thick fine silk which has been boiled for an hour in 1,000 mercury perchloride dried in a 1,000 solution of benzoidine in absolute alcohol, and then kept in sterile liquid paraffin. Lango used material prepared somewhat similarly for the construction of artificial tendons and ligaments. Silk thus treated is soft and flexible but retains its full tensile strength. When introduced into the tissues it does not cause irritation, and it has the curious property that although it is not absorbed, it is so entirely assimilated that the resulting structure closely resembles normal tendon or ligamentous, but possesses the great advantage that it will not stretch.

The closure of hernial orifices by this method is exceedingly simple. When peritoneal sac is present the margins are drawn together with care to retain portion of the sac. The method is quite satisfactory also for cases of hernia in which there is no true peritoneal sac as the surrounding tissues provide an adequate attachment the opening in the muscular abdominal wall being darned by interlacing strands of the silk from side to side of the aperture. The strands are arranged so as to form a net with meshes about 1/4 in square. An attempt is made to close the aperture by pulling the sides of the opening together the tension being only such

as will bring the margins to their normal anatomical position. H. A. McKNIGHT, M.D.

**Denzer, B. S.** The Diagnosis of Peritonitis and Peritoneal Transudates by Means of Abdominal Puncture with a Capillary Tube. *Arch. Pediat.* 1922 XXXI, 750.

Because of the difficulties in the diagnosis of peritonitis in infants efforts were made by the author to devise an instrument which would demonstrate the presence of minute amounts of fluid in the peritoneal cavity. Through the shaft of a metal trocar cannula 3/4 in long and with a 7-gauge bore he inserted glass tubing and then cut the tubing off so that it protruded 1 or 2 mm from the tip. When this trocar cannula is inserted through the abdominal wall a sudden release of pressure indicates when it has entered the peritoneal cavity. The trocar is then removed and the capillary tube inserted as far as it will go. Denzer says it is advisable to wait a few minutes and to turn the needle in various directions before concluding that there is no fluid.

In over a hundred taps done in this manner there were no complications. E. C. ROBERTSON, M.D.

**Reichle.** The Surgical Treatment of Peritonitis (Zur chirurgischen Behandlung der Peritonitis). *Zeitschrift f. Chir.* 1922, 212, 507.

If the primary focus can be wholly removed the abdomen is entirely closed, even in the presence of erudate. It is washed out only if it contains a large quantity of gastro-intestinal contents. Mikulicz's tamponade is employed unless the surfaces can be entirely covered with peritoneum. Particular attention is paid to the cul-de-sac of Douglas. The abdomen is closed tightly around the gauze drain. In the total number of cases of appendicitis treated by the author—including cases of peritonitis—the mortality was 5 per cent, while in 150 cases of severe peritonitis with perforation (among which were ninety-seven late cases) it was 58.5 per cent.

Goebel, Borchard, Hufschmidt, and Melchior employ tamponade as little as possible and through narrow openings in the abdominal wall. Pende considers a 0.9 per cent sodium-chloride solution too irritating as a wash for the suppurated abdomen and recommends normal salt solution. Goebel, Hoffmann, and Rudolf advise enterostomy when necessary. Goetzig emphasizes the fact that either escapes too rapidly and may favor postoperative adhesions. In cases of abscess of the cul-de-sac of Douglas, Rudolf introduces Pregl's solution through an abdominal drainage tube. He finds that this prevents the secretion of pus and favors rapid healing. The stomach is washed out. Brossmann reported the cases of 10 persons with acute peritonitis who came to the operating table in such a grave condition that he was able only to open the abdomen, drain the pus, and pour in 500 ccm of narcotic ether. All four resulted in both instances.

SCHULTZE (Z)

## GASTRO-INTESTINAL TRACT

Moppert, G. G. Gangrenous Perforation of the Stomach, a Complication of Diaphragmatic Hernia (La perforation de l'estomac par gangrène complication de la hernie diaphragmatique) *J de chir* 9 27, 253

U If a perforated gangrenous stomach is found as soon as the abdomen is opened free of it below it floats in peritoneal cavity filled with gastric contents. If the surgeon does not make thorough exploration he attributes the localized gangrene to a perforated ulcer, phlegmon, a volvulus or arterio-mesenteric compression, when the true cause may be a diaphragmatic hernia. In the latter event the operation is as follows:

The stomach becomes strangulated in hernial sac or through a hiatus of the diaphragm. Its all becomes gangrenous and perforated. The perforation is the escape of gas the strangulation and incarceration cease, and the stomach falls back but the abdominal cavity discharging its contents through the perforation.

Moppert describes three clinical cases of gangrenous stomach due to diaphragmatic hernia. The first is that of a man aged 4 years who had congenital hiatal hernia of the diaphragm in which the stomach, omentum and spleen had probably been involved since intra uterine life. The patient is operated upon the day after he entered the hospital. The symptoms of peritonitis but died.

The second case is a case of congenital diaphragmatic hernia in a girl of 73 yrs. The stomach was strangulated in the sac and had perforated and become freed. The patient also died following an operation.

The third case was that of a woman aged 8 years who had a congenital hernia and incarceration of the stomach with the symptom of acute obstruction and perforation followed by incarceration and peritonitis due to the discharge of gastric contents into the peritoneal cavity. Death occurred six hours after operation.

In general, gastric perforation occurring in strangulated diaphragmatic hernia has been attributed to volvulus. In good diaphragmatic hernia this is found to be accompanied by volvulus of the stomach and in most cases this is complicated by perforation. Thirty six cases have been found in perforation of the stomach but demonstrated perforations of the transverse colon. In the three cases reported by Moppert there was no volvulus.

H. A. BEEBAE

Hatlebakk, J. J. A Fibroma of the Wall of the Stomach Adherent to an Ulcer on the Lesser Curvature (Ein Fibrom der Magenwand verflochten mit einem Geschwür an der kleinen Krümmung) *Deutsche Zeitschr. Chirurg.* 9 2, 177, 927

Cancer and ulcer are among the most common lesions of the stomach, while gastric sarcoma and gastric lipoma are very rare. On the other hand,

fifty five cases of fibromyoma of the gastro-intestinal tract were reported during the year 1921.

The author describes the rare combination of gastric ulcer with fibroma of the stomach. The anamnesis caused by the fibroma led to the assumption that the tumor was partly responsible for the development of the ulcer. The author's opinion is the fact that the fibroma, as situated on the lower curvature, namely on the gastric strait of Waldeyer justifies the assumption that it was the primary condition and the ulcer was secondary.

HOWE (2)

Debove, X. and Ducrest, C. Repeated Interventions for Gastric Carcinoma (Des interventions répétées dans le cancer gastrique) *Rev de chir. Par* 9 28, 359

The authors add acute secondary surgical intervention in cases of gastric carcinoma is such symptoms of stenosis of the artificial opening become manifest.

The gastro-enterostomy opening may become closed by involvement of its gastric side by the growth of mechanically by metastases in the transverse mesocolon or other structures immediately adjacent. Though the secondary operation is only palliative the authors believe the formation of a new opening is indicated to give as much relief as possible.

LOVELL E. D. MD

Glenn, O. The Importance of Acidobilia in Surgical Practice (L'importance de l'acidobilia nella pratica chirurgica) *Rivista italiana di chir.* 1922 11, 241

When women take up definite location in the body their toxic products have very important effect upon the blood, the nervous system, the temperature, and the nutrition. Several investigators have found that in animals such toxic products may cause death.

Cygnon discusses in particular the secondary phenomena due to the disturbance of orms from their fixed locations and their migration caused by operations on the abdomen. Migration is almost always upward. Both ether and chloroform cause the detachment of orms from the intestinal mucosa and free them free in the intestinal lumen. Common enteropathies may be complicated by symptoms due to orms, and the postoperative course in such cases is often similarly complicated. Cygnon has frequently observed such deviations from the normal in patients known to be carriers of orms. This phase often culminates in the vomiting of worms or their discharge in the feces. Twelve to twenty-four hours after operation there is periumbilical pain, and after forty-eight hours vomiting occurs. Such disturbances are usually due to the primary lesion of the operative technique. The blood shows a decided eosinophilia sometimes higher than 50 per cent, the pulse is small and frequent, and there may be meteorism and diarrhea. The disturbance may persist for several days, and it is only by examination

of the omits that the surgeon can determine the cause of the condition. During the attack the intestine may or may not show an acute catarrh.

In some cases migrating ascariides cause perforation of the intestinal wall.

The conclusion drawn by the author is that patients with a history of worms should be given treatment for this condition before they are operated upon. W. A. BARNES.

Lane, W. A. On the Treatment of Non-Malignant Affections of the Colon. *Lancet*, 9 cm., 14.

Lane regards all abnormal conditions of the colon as the direct or indirect result of chronic intestinal stasis. He classifies them into 4 main groups, viz. cases of intestinal stagnation in which a reaction takes place and those in which reaction is altogether absent.

One group is characterized by the formation of bands to the colon. One band of importance forms at the right iliac crest, another below the gall-bladder one at the splenic flexure, one at the left iliac crest, and one in the left iliac fossa. The first and last are the most important. Mention is made also of the so-called Lane kink or band kinking the terminal ileum.

According to the author these bands are all evolutionary identical in origin, function, and structure, and due to the effort of the organism to meet an abnormal loading up of the bowel resulting from distal obstruction.

Another important development which arises not infrequently in consequence of the strain exerted by the loaded caecum is what Lane calls the controlling appendix, an appendix which acts as a ligament, having become attached by adhesions to the under surface of the mesentery behind the end of the ileum. When the ileum and caecum drop into the pelvis the ileum is kinked abruptly over the anchored appendix and its lumen is more or less occluded. The kinking of the anchored appendix favors obstruction of the appendiceal lumen. The removal of such an appendix is followed by great benefit.

It is in this type of static colon that cancer of some portion of the gastro-intestinal tract commonly occurs.

The other extreme type of chronic intestinal stasis is characterized by complete absence of effort on the part of the organism to oppose the elongation and prolapse of the large bowel, no new acquired bands or membranes being formed. The pelvic colon becomes greatly elongated, forms many abrupt angles in the pelvis, and offers great resistance to the passage of solid material through it. In consequence, an infection of the mucous membrane of the proximal colon takes place producing colitis and its complications.

In cases of obstruction associated with the formation of bands the operation for the first and last kink, as Lane calls the kink in the left iliac fossa, consists in careful separation of the bands which

form the kink and the accurate apposition of the peritoneal edges if any are left deprived of serous covering. Other bands and a controlling appendix are then dealt with if present. If an ileal kink is found and the membrane is extensive, a drainage tube is put in because the acquired membrane contains infecting organisms.

In fat subjects another complication of obstruction with the formation of bands is diverticulitis. This may be met by inserting the divided end of the ileum into the pelvic colon. As in cases of colectomy, the patient should be instructed to secure three evacuations daily. In some cases colectomy offers the best results.

Tuberculous ulceration of the colon following obstruction is frequently limited to the proximal half. For this sequel, either of the operations mentioned may be advisable.

In cases of disease of the colon without the formation of bands, auto-intoxication is the condition requiring attention. This is the result of infection of the contents of the small intestines. Such infection causes most serious degenerative processes in every tissue of the body and renders the subject liable to infection by other diseases. Shortening of the colon, colectomy or the unfasting of the divided ileum to the pelvic colon is indicated when medical methods have failed.

A complication of the elongated large bowel is a chronic or acute volvulus. This should be corrected by operation. Lane has excised the volvulus and performed a colectomy for this complication. The same procedures may be applied to megacolon. Much the same treatment is advocated for severe cases of mucous and membranous colitis, but resorted to less frequently.

Cancer is the final condition following chronic intestinal stasis. CAREL R. STEINER, M.D.

Lockhart Mummery, J. P. The Treatment of Acute Obstruction from Cancer of the Colon. *Lancet*, 913 cm., 7.

A small incision is made over the caecum and a knuckle of the cecum all drawn out and protected with gauze swabs. An opening is then made in the cecal wall with a knife, and a rubber drainage tube about  $\frac{1}{4}$  in. in diameter is pushed into the caecum for a in. and stitched to the cecal wall with catgut, each stitch going through the wall of the tube and packing up the cecal wall  $\frac{1}{4}$  in. away from the tube. When the sutures are tied, a cuff of cecal wall has been turned in. A puncturing suture is then inserted well away from the tube and tied so as to turn in more of the cecal wall. The ends of this suture are tied and brought through the deep fascia and peritoneum. One or two other sutures are then placed so as to fix the caecum at the point at which the tube enters to the deep surface of the abdominal wall, and the abdomen is sewed up around the tube. A wide collapsible rubber tube is tied to the end of the rubber drainage tube projecting from the dressings and carried to a pail under the bed. The tube

remains quite water-tight and gas-tight for as long as a week, and as the contents of the cecum are liquid, they drain readily through it; no leakage takes place in the wound and the patient is kept dry and comfortable.

After the obstruction has been relieved and all signs of peritonitis have disappeared—generally in five or six days—the abdomen is opened in the midline or on the left side, and the cause of the obstruction ascertained and dealt with under the most favorable circumstances.

These openings close in a week or ten days and most of them do not leak after the tube has come away. If the cecum is not distended, exploration is called for as the obstruction is in the small bowel.

CARL R. STEVENS, M.D.

Funkler W. A. A Scapling Operation for Abscesses About the Rectum. *J. Lencet* 9 281, 567.

A substantial percentage of perirectal abscesses have connection with the bowel complete fistulae being formed when they are opened.

Whether a bowel opening is present or not, the best treatment is early and radical incision, the wound being kept wide open while the cavity is granulating from the bottom up and. If the wound is not kept open a deep cavity or sinus with a small external opening results which renders healing and medication difficult or impossible. A T or cross-shaped incision is preferable to simple straight incision.

To obtain side-open wound the author recommends scapling the abscess. A liberal cross-shaped incision is made as near the anus as possible and the extent of the abscess cavity explored with the finger and probe. Removal of the four segments of the skin formed by the cross-shaped incision leaves a somewhat circular opening. In general, the circle of skin removed should be slightly larger than the greatest diameter of the abscess.

This method gives a truncated cone-shaped cavity with its base outward, which is easy to dress and to medicate to its depths. Frequently the use of nitric acid or 40 per cent oil or nitrate solution will heal small openings into the bowel. If division of the sphincter is necessary later the patient will be in no worse condition than following an ordinary incision of the abscess, and the tract will be definitely defined.

In the author's experience the removal of the skin flap has not prolonged convalescence. By the time the wound has granulated from the bottom, the skin has contracted and healed down to meet it.

WALTER C. BRUNER, M.D.

Fennelington, J. R. Carcinoma of the Rectum and Pelvic Colon. Age- and Site-Incidence and Prophylaxis. *J. Am. M. Ass.* 9 4, 1932, 849.

In 774 cases of carcinoma of the rectum the condition occurred between the ages of 4 and 70 in 75 per cent, and between the ages of 4 and 8 in 1 cent.

four cases. Carcinoma of the pelvic colon has been found in a boy of 9 years and in a girl of 12.

In 48 of a series of 570 cases the cancerous tumor was within reach of the examining finger. In the remainder it was higher up in the bowel or at the rectosigmoid junction. The anterior wall of the bowel is generally involved. More frequent rectal examinations are necessary to discover this condition early.

Internal palpation, with or without proctoscopy and sigmoidoscopy is our chief reliance in the diagnosis because none of the serum or other tests so far introduced has proved reliable. Bleeding, pain, and diarrhea are not early signs of carcinoma of the rectum, but the evidence of considerable damage already done. The laity must be educated to get rid of any ailment which favors the development of cancer.

PATRICK W. SWENK, M.D.

#### LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Bodnar L. Cholecystitis Cystica (Cholecystitis cystica). *Arch. f. path. Anat.* 92, 1932, 339.

The author describes the autopsy findings in the case of a woman 60 years old who was operated on for strangulation ileus and died from hypostatic pneumonia.

The gall bladder contained 10 sacculated concretions. When opened, it was 7.5 cm. long, 1 cm. wide and about 7 to 14 cm. thick. At the cut surface the mucosa was thickened, the thickness varying in different areas. Within the wall of the gall bladder, and particularly in the muscle layer, the sections showed numerous, very minute, spherical, smooth-walled spaces and also larger ones up to 4 mm. in diameter some of which are located just under the serosa. These spaces were lined by high cylindrical cells with longitudinally oval nuclei and goblet cells.

In the examination of the serial sections it was observed that all of the cavities, including those which appeared closed on all sides, opened into the lumen of the gall bladder between the folds of the mucous membrane. In the wall of the gall bladder there were also changes characteristic of the chronic cholecystitis which had run its course.

Bodnar believes that most of the cystic cavities had their origin in the Luschka ducts and that only some of the small ones in the region of the large spaces may be regarded as mucous glands changed by disease. The dilation of the Luschka ducts must be explained as resulting from an abnormally deep growth of their epithelial lining in addition to passive distention the latter is responsible alone only in the peripheral parts of the cavities.

In addition to inflammatory irritation, peculiar capacity of the epithelium of the Luschka ducts to proliferate must also be assumed as an etiological factor. It is possible that the findings described are characteristic of precancerous stage. BRONK (2).

Morrison, R. The Diagnosis and Treatment of Cholelithiasis. *Bull M J* 93 003

Of the many theories advanced to explain the formation of gall stones the most unusually popular has been that which attributes it to infection of the gall-bladder. Some predisposing causes are more common than others. Among the former are repeated pregnancies, obesity and a sedentary life. In the author's experience the most frequent cause is insufficiency of bile intake.

The subjective symptom on which a diagnosis of gall stones can be based reasonably is severe pain referred to the epigastrium. This is often very sudden in onset, in some cases lasts only a few moments and in others for hours, and catches the breath before inspiration is complete.

A tender area over the gall bladder on deep palpation during forced inspiration, discovered during the attack of the characteristic pain and lasting for time after it, is a reasonably reliable indication of gall stones, the diagnosis based upon it proving correct in eight cases out of ten.

A gall bladder tumor or jaundice preceded by typical attack of pain is usually a positive clinical indication.

There is only one reasonable treatment, viz operation. In the author's opinion, cholecystomy is the best operation when the cystic duct is patent.

If the gall bladder shows serious infection it should be opened freely the stones removed and the gall bladder walls and interior carefully inspected. Unless the gall bladder is so obviously diseased that recovery seems impossible it should not be removed. If infected, it should be drained. If bile discharges freely the tube should not be kept in for more than a few days and never for more than two weeks.

If the gall bladder is so severely diseased that recovery seems impossible it may be dealt with by cholecystectomy or the thermocautery.

The author believes that in calculous cholecystitis the removal of the stones may be all that is necessary but for primary cholecystitis, the operation of election may be cholecystectomy.

H A McK. *IBR M D*

Willems, C. The Technique of Exposing the Biliary Passages (Technique de la découverte des voies biliaires). *Arch française-belges de chir* 922, xxv 834

Willems refers to the danger of vertical incisions. Vertical incisions near the border of the rectus cut a certain number of the terminal branches of the lumbar nerves supplying the muscle walls, causing unilateral paralysis. Transverse incisions are much less dangerous and when they are exactly sutured and heal by primary intention do not impair the muscle function. Willems has used such incisions for long time. The lumbar region being raised by cushion, the incision is begun near the median line, extended outward and obliquely along the costal border one or two fingerbreadths below the ribs, about the site of the lower border of the liver and continued to a point in the flank which is determined by the condition anticipated. It cuts through the right rectus, the oblique major, the oblique minor, the transverse, and, in its terminal part, the anterior fibers of the great dorsal muscle. The muscular bed traversed is therefore thick and formed of several planes.

If the liver is free from adhesions its lower edge rises into the wound when the abdomen is opened. If adhesions prevent this, they are detached. The liver is then basculated on the edge of the thorax to expose its lower surface. This is accomplished with the help of a special assistant wearing thread gloves over rubber gloves. The bascultation greatly facilitates the approach to the biliary tract, the performance of cholecystectomy, calcification, the extraction of calculi, and hepatic drainage.

W A RICHMOND

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Meichler, E. A Peculiar Form of Tumor Like Osteomyelitis (Eine Sonderform der "tumorigen Osteomyelitis"). *Med Klin* 93 xviii 303

This is a brief report of a case of osteomyelitis of the left thigh following influenza in a man 39 years of age. The onset was gradual and the disease was localized within narrow limits. A cortical sequestrum which was formed remained in situ during the entire course of the condition. The clinical picture was dominated by massive, soft granulation tissue which involved chiefly the extensor muscles. The tumor-like character of this tissue was so pronounced that only after its radical extirpation and the dis-

covery of the sequestrum was it possible to exclude sarcoma and to make a correct diagnosis.

LANGE (Z)

Baker, C. F. Report of an Unusual Foreign Body in the Arm. *Am J Roentgenol* 93 12, 777

The patient, a woman, fell on the ice. The accident caused entire loss of function at the elbow and a small wound on the posterior surface of the forearm, just below the joint. The diagnosis made was traumatic injury of the elbow with possibly a compound fracture or a dislocation. The presence of a fracture was suggested by the projection of a small piece of bone from the wound. The surgeon in charge stated that he was positive as to the presence of a bone lesion as he had pressed





## SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

**Greenstein, F.** Paralysis of the Shoulder Girdle (Paralyse de la ceinture scapulaire). *Arch. franc.-belges d. k.* 9: 3, 229, 95

The case reported was that of a girl 15 years old, about the age of 12 years, had an illness which was followed by temporary paralysis of the arms and legs and permanent paralysis and atrophy of the left deltoid muscles and the right shoulder girdle. Abduction the only active movement possible in the right arm caused forward luxation of the humerus. X-ray examination of the glenoid cavity and the head of the humerus showed a condition somewhat analogous to that in congenital dislocation of the hip due to shallow acetabulum.

Although doubtful of the result the author risked an edonomuscular transplantation. He ligated the tendon of the pectoralis major placed the supra-scapular tendon, sutured the tendon of the pectoralis minor to that of the supra-scapular tendon detached from its clavicular and spinous attachment and sutured it to the trapezius and completed the operation by an anterior capsulorraphy. The arm then kept in abduction and external rotation in plaster cast for 6 weeks.

When the cast removed the patient was able to make movements of the arm which were impossible before the operation, but a few days the luxation recurred and it was evident that the humeral head had again slipped from the glenoid cavity. Six months later the luxation was reduced by operation arthrodesis followed by second arthroplasty as done and the arm again immobilized. The final result was excellent.

W. A. B.

**Orell, S.** A Prosthesis for the Thumb (Eine Daumenprothese). *Arch. klin. Chir.* 5. Bd. 9. H. 3.

In an accident with a saw a man lost all the phalanges of the thumb and index finger and the proximal end of the second metacarpal bone. As he was not satisfied with the results of the operation which was done to remove the cicatrices and to deepen the fold between the thumb and index finger attempt was made to construct a prosthesis.

The best material for this kind of prosthesis is hard rubber. The phalanx of the apparatus was formed on the pattern of the phalangeal portion of the normal thumb. The end of plastic material of the thumb, the metacarpus, and the carpal portion of the deformed hand as of the same part of the normal hand. From these negatives the appropriate impression of the Zander Institut of Stockholm prepared plaster positives and negatives.

The phalangeal portion of the thumb was attached to the trapezophalangeal joint of the semi-flexed finger. Hard rubber is suitable because of its elasticity and resistance to moisture and chemical and thermic influences, and because it may be colored as desired and its surface is not too hard or fragile. A suitable non-durable metal wire was used as connecting joint between the hard rubber phalanx and the carpus so that motions between the carpus and metacarpus might be transferred to the rubber phalanx. The phalangeal portion of the thumb of a male corpse was found to weigh 25 gm. The thumb prosthesis described weighs 51 gm. The free point of the prosthesis bears a flexing load of over 4 kgm. while the normal thumb bears flexing load of more than 5 kgm. The author's thumb prosthesis meets not only the cosmetic but also the functional requirements. *Lotta. Verh. kl. M. D.*

## SURGERY OF THE SPINAL COLUMN AND CORD

**Cohen, I.** A Case of Backward Luxation of the Seventh Cervical Vertebra with Isolated Compression of Nerve Root. (*Le cas d'une luxation de la vertèbre cervicale avec compression isolée.*) *Arch. franc.-belges d. k.* 10: 15

In a rare three cases of luxation of cervical vertebrae collected in 1904 by Henle there were no symptoms in eight temporary cases, symptoms in 11 and persistent partial paralysis in 1. Cohen's case began as followed by total paralysis of the right arm with intense pain and atrophy of the right hand. Examination of the spine three months later revealed a dislocation between the sixth and seventh cervical vertebrae and the X-ray showed backward luxation of the seventh cervical vertebra. The cerebrospinal fluid was normal. Manual reduction was attempted without success.

The patient presented marked motor and sensory hemiparesis of the region innervated by the seventh

and eighth cervical roots. For six months following the accident the paralysis decreased spontaneously but at the end of this time the improvement ceased. The patient left the hospital refusing to permit an operation to liberate the compressed nerve roots.

W. A. B.

**Frazier, C. H., and Spiller, W. G.** An Analysis of Fourteen Connecticut Cases of Spinal Cord Tumor. *Arch. Neurol. & Psych.* 9: 18, 433

In the cases reviewed the final diagnosis was not established until an average of 27 years had elapsed from the date of the initial symptoms. The time ranged from nine months to five years. Ten of the patients were women and four were men. Their ages ranged from 18 to 64 years. Ten were between 30 and 50 years of age.

Nine of the tumors were extramedullary and subdural, two were extradural, one cranial, one in the vertebral column and one peripheral spinal and partly

Intracranial: Six level ed the cervical segments, three the upper thoracic segments, four the lower thoracic segments, and one the cauda equina.

In thirteen of the fourteen cases the first symptom was pain. In the single exception the tumor was extradural, and never caused pain. In the other cases the pain often occurred intermittently: it lasted a few days or months, and frequently was worse at night or in the early morning. In several instances it decreased appreciably at the onset of paralysis.

T<sub>1</sub> indicates the time which elapsed between the onset of pain and the first signs of motor impairment.

TABLE 1. TIME BETWEEN PAIN AND FIRST SIGNS OF MOTOR IMPAIRMENT.

[illegible]

in all cases three or more years had elapsed in the cases two years, in two more between one and two years and in three cases less than one year.

Tails associated with atrophy in the root distal bulbous of the upper limb should raise the suspicion of a tumor but if the roentgen ray examination yields no pathologic conclusion it is usually desirable to defer operation until clinical evidence of impingement of the cord is noted. Exaggeration of the tendon reflexes of the lower limb, on the same side

the pain and atrophy of the upper limb, especially if associated with the Babinski reflex, is a combination that may justify early operation.

The second symptom in every case was a subjective sensory disturbance other than pain.

The Brown-Séquard syndrome is the classical syndrome of spinal tumors is represented as the second of the three cycles, the first being the root cycle and the third, paralysis of motor and sensory function. In only 1% of the authors cases are there unilateral sensory phenomena, and these were not of the Brown-Séquard type.

Motor disturbances are present in greater or less degree in most cases. Table III shows the motor symptoms, the duration of the lesion, and the relation of the tumor to the cord.

TABLE III  
MOTOR SETTINGS

Duration	Side	Location	At the delivery	Limbs
5 months	Left	Intertubal	Spontaneous	
9 months	Right	Intertubal	Spontaneous	Right leg
years	Posterior	Intertubal	Spontaneous	
years	Posterior	Intertubal	Spontaneous	
years	Left	Intertubal	Spontaneous	
months	Right	Intertubal	Spontaneous	Left leg
4 years	Posterior	Intertubal	Spontaneous	Right leg
years	Left	Intertubal	Spontaneous	
months	Right	Intertubal	Spontaneous	
months	Right	Intertubal	Spontaneous	Right and left legs
months	Left	Intertubal	Spontaneous	Left leg
months	Right	Intertubal	Spontaneous	
months	Posterior	Intertubal	Spontaneous	Right leg

In only 1 of the fourteen cases was there disability in the upper extremity. In seven cases both lower extremities were involved, and in the remainder only one. The development of motor disability was in most instances (case out of fourteen) a matter of weeks or months. This is in rather striking contrast to the period of root pains, which ranged two years. In other words, when the tumor had increased sufficiently in size to cause cord compression the motor phenomena developed rapidly.

There are only five cases with the xanthochroia phenomenon. Above the lesion was present in years four, six, three, one year and one month respectively.

The Quakered test, the newer test for spinal block, as not tried out in every case. This test is based upon the effect on the pressure in the lumbar puncture manometer when compression is made on the internal jugular vein. A positive finding by either method should be regarded only as confirmatory evidence of the presence of a tumor since negative findings do not preclude the possibility of such lesion and positive findings have been noted in cases of lesions other than tumor.

In five cases there was difficulty in urination, and in one, occasional urinary incontinence. In three there was constipation, and in two bowel incontinence.

In the segmental diagnosis referred pain, sensory disturbances, muscle atrophy or impairment of muscle power and disturbed reflexes must be taken into consideration.

Table IV gives the relationship between the region to which pain is first referred and the level of the tumor.

TABLE IV.—RELATIONSHIP BETWEEN REGION TO WHICH PAIN WAS REFERRED AND LEVEL OF TUMOR

REGION OF PAIN	LEVEL OF TUMOR
Left shoulder	C 2 left
Right shoulder	C 2 left
Between shoulder	C 4 right
Between angle of scapula	C 4 right
Right and left arm	T 1 right
Anterior chest	T 1 right
Back	T 1 right
Posterior	T 1 right
Right leg	T 1 right

In one of the instances in which sweating of the face was recorded, it occurred before operation and in the other after operation.

The Babinski reflex as recorded as present in seven cases and absent in one.

Disturbances in the movement of the diaphragm are significant as localizing symptoms. It appears that the function of the diaphragm is not entirely dependent on the phrenic nerves.

When there has been no degenerative changes in the cord, complete restoration of function may be anticipated. In only two cases was there absolutely no return of function.

All of the tumors in this series of cases were extramedullary and the majority were endotheliomas or fibromas—tumors with definite encapsulation and limited increase by the dimensions of the spinal canal.

In only one of the series was removal of the growth difficult; in this instance the tumor involved both the spinal canal and the posterior fossa. At least two-thirds of the growth, firmly fixed fibroma, was below the foramen magnum. The patient died.

In every case the tumor was exposed by removing three or four spinous processes and laminae. In only one case was it necessary to enlarge the opening. The cord was protected by traction on the dentate ligaments or by the use of a retractor. There is no difficulty separating the cord from the tumor or the tumor from the cord. Only after the pus is divided is the line of demarcation clearly defined. Occasionally one root either the anterior or the posterior may be incorporated in the tumor and its removal may be desirable. In four of the cases one posterior root was sacrificed in another anterior root.

The close adherence of the tumor to the dura makes it advisable to remove that section of the

dura to which the tumor is firmly attached. Hemorrhage from this area is quite free and can be controlled only by means of muscle grafts. With this exception, the operation is conducted in a bloodless field. After the removal of the growth, the dural wound should be closed with a continuous silk suture, and the muscle, meningeal structures, subcutaneous tissue, and skin with tier sutures.

The history of each of the fourteen cases is given. The article contains twenty-one figures.

CARL R. STEINER, M.D.

Elberg, C. A., and Stookey, R.: The Mechanical Effects of Tumors of the Spinal Cord: Their Influence on Symptomatology and Diagnosis. *Arch. Neurol. & Psychiat.* 9, viii, 50.

Elberg and Stookey group tumors of the spinal cord as follows:

All growths on the posterior aspect of the cord, whether in the median line or lateral, but behind the posterior nerve roots, are classified as posterior growths. Those lying on the lateral aspect of the cord, in front of the posterior roots but behind the dentate ligament, are dorsolateral growths. Those which are lateral in front of the dentate ligament but behind the anterior roots, are ventrolateral growths. Those that lie on the anterior aspect of the cord, in the median line or more toward the midline but in front of the anterior roots, are anterior or ventral growths.

In their series of cases 64 per cent of the growths were dorsal or dorsolateral, and 36 per cent were ventral or ventrolateral.

TABLE I.—RELATION OF TUMORS TO THE SURFACES OF THE CORD (NOT INCLUDING THOSE BETWEEN THE ROOTS OF THE CAUDA EQUINA)

Location	Extramedullary	Intramedullary
Anterior and posterior		
Anterior and lateral		
Anterolateral		
Posterior and median		
Posterior and lateral		
Posterolateral		
Lateral and posterior		
Lateral or around the cord		
Total	41	14

While pain is often absent, there are very few cases without some type of sensory disturbance as an early symptom.

In cases of ventral and ventrolateral growths subjective paresthesia is very frequent.

Tumors that lie on the ventrolateral or dorsolateral aspect of the cord are much more apt to give an early Brown-Séquard type of motor and sensory disturbance than tumors in other locations. If the disease began with root pains, the tumor usually was dorsolateral; on the other hand, early root pains did not occur but there were early contralateral paresthesias, the growth usually lay on the ventrolateral aspect of the cord.

The mobility of the cord at various levels has decided influence on the symptoms and signs of an expanding lesion within the spinal canal.

TABLE II SENSORY SYMPTOMS AT ONSET

[illegible]

The reversed Brown Séquard syndrome as noted in six cases operated on. This is explained as follows: When the growth has reached certain size and before actual pressure on the cord by the tumor has occurred, the cord has changed its position and lies against the dura and the bony wall of the canal on the side opposite that of the tumor. Two diagrams are shown to establish this condition.

Ten of the patients the symptoms and signs of the spread compression were aggravated after fluid had been withdrawn by lumbar puncture. Three had extradural growths, and six had intradural growths firmly adherent to the dura. In one case the record is incomplete. The authors believe that if the symptoms and signs of motor and sensory disturbance be closely monitored after lumbar puncture, it is

removal of fluid, the diagnosis that the growth is extradural or intradural and adherent to the inner surface of that membrane is justified.

The conclusions drawn are summarized as follows:  
1. Tumors on the anterior and anterolateral aspects of the spinal cord are relatively frequent, constituting about one third of the cases.

Although many patients risk spinal cord trauma as a result of the onset of the large majority have some subjective sensory disturbance as an early symptom.

3 In some cases objective sensory disturbances are absent for long period and appear only after lumbar puncture.

4 Tingling, coldness, burning, and other paresthesias are not rare in cases of extracardiac atherosclerosis.

3. If the twisting occurs in the contralateral lumbosacral and below the level of the growth, it is probable that the tumor lies on the ventrolateral aspect of the cord.

6 Intradural tumors adherent to the dura and extradural grow the not infrequently press the cord to the opposite side of the spinal canal and cause early motor symptoms on the side of the body opposite that of the tumor.

7 If the signs of motor and sensory disturbances become aggravated after lumbar puncture and the fluid is bloody, it is probable that the growth is either extradural or intradural but adherent to the inner surface of the dura mater.

8 Tenderness of a spongy process at the vertebral level of the lesion points to bone disease, but tenderness of spaces well below the vertebral level of the growth points is an unilateral extramedullary tumor.

EARL R. STERNBERG, M.D.

CARL R. STYNE, M.D.

## SURGERY OF THE NERVOUS SYSTEM

Georgakidis, G. The Employment of Electrical Methods in the Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerve Arch. *Radial & Electrotherapy* 9: 225, 6

The nerve and muscle reactions to electrical stimulation are studied in regard to (1) the form and (2) the quantity of the contractions

Theorem as to qualitative reactions has remained essentially the same since the time of Erb, but those regarding the quantitative reactions have changed since the discoveries of Hoorng Weiss and Lapicque established the measurement of the excitability on bases different from those of the Dubois Raymond hypothesis which has been proved erroneous.

The Dubois-Reymond law was established on the basis of continuous current (galvanic excitability). Faradic excitability (produced by induced waves) appears to have no relation to this law. The author summarizes the findings of experiments made by Dubois-Reymond who excited the frog's gastrocnemius muscle directly or through the sciatic nerve.

The excitation as caused only the make and break of the current and provided there was no sufficient intensity. During the passage of current of constant intensity no excitation was produced. If during the passage of constant current the intensity as suddenly increased these sudden values of intensity acted respectively as make and break of current and caused excitation. If current was progressively made or broken, the slower the variation of intensity the greater the intensity that could be employed. With sufficiently slow establishment of the current, excitation was no longer produced whatever the intensity started. The author summarizes the results of Dubois

Revised as follows:

The excitation is produced exclusively by the variation of intensity and not by the absolute magnitude of the intensity.

The variation of intensity is more efficient the more rapid it is the maximum efficiency is reached by the instantaneous make or break of constant current.

3 The time of passage of the current and consequently the quantity of electricity and energy has no rôle in the process of excitation.

The striated muscles of vertebrates, which have contractions of short duration, are called *muscles pides*. Smooth muscles of vertebrates and voluntary muscles of certain invertebrates such as molluscs or crustaceans, which have contractions of long duration, are called *muscles lentes*. Fick found that the progress of contraction may be made much more slowly, yet with the efficiency of *muscles lentes* than on *muscles rapides*. He found also that for short time intervals in *muscles lentes* and *muscles rapides* the intensity giving the threshold depends on the time of passage of the current, but that the time limit beyond which the law of Dubois-Reymond is exact is much shorter in the *muscles pides* than in the *muscles lentes*. Hoorweg studied and discovered the law of Dubois-Reymond in man by the aid of condenser discharges.

Weiss used a constant current and rectangular waves of very short duration obtained by means of a pistol-bomb ball, flying at known velocity cut two wires in succession. The duration of the current depends on the distance between the two wires and the electric velocity of the ball. When the resistance is constant, the intensity is proportional to the voltage. Weiss showed that when the duration of the current is increased the intensity which gives the threshold diminishes to a minimum intensity, which remains the same although the duration of the passage of the current continues to increase. The relations of intensity and quantity of electricity together with the current's passage time constitute the law of Weiss.

Excitability cannot be characterized by the recognition of the galvanic threshold alone.

Hoorweg showed with condensers that in man the voltage necessary to obtain the threshold diminishes to a minimum value as greater capacities are employed, and the minimum value then remains constant whatever the capacity. This law of Hoorweg is applicable only to condensers.

The chronaxie of Lapicque is the time of passage of current which is constant for given organs and characterizes its excitability. The rheobase of Lapicque is the intensity necessary to obtain the threshold of the contraction with a make of prolonged current (classic galvanic threshold). The chronaxie is the time of passage of current necessary to obtain the threshold of contraction with an intensity double the rheobase. To know the chronaxie it is sufficient to find the key the threshold of make of galvanic current, and then to double the corresponding voltage and to find the time of passage of the current necessary to obtain the threshold with the voltage double that of the rheobase. If the discharge of condensers is employed the chronaxie is the capacity which when the current has a constant resistance, gives the threshold with the voltage double that which has given the threshold with the galvanic current.

On the basis of a study of chronaxie in animals, Lapicque formulated the following laws of general physiology.

1 The chronaxie characterizes the excitability and, with the exception of temperature, does not vary with experimental conditions.

A muscle and its motor nerve have the same chronaxie; this is the law of isochronism of motor nerve and muscle.

3 When the chronaxie of one of two organs varies alone there is inexcitability by the nerve when the ratio of the nerve and the muscle passes 2. Cane modifies the chronaxie of the muscle without changing that of the nerve. Strychnine causes the chronaxie of the nerve to vary without modifying that of the muscle.

4 Chronaxie classifies the muscles of different animals as the duration of their contraction classifies them, but with more precision. While the form of the contraction depends on the physicochemical state of the muscular fiber resulting from the histologic structure of that fiber and from the physiological conditions in which it is found (cold, fatigue, etc.), the amplitude of the contraction depends exclusively on the number of fibers; it is therefore comprehensible that the chronaxie varies directly with the form of the contraction, while it is fairly independent of the amplitude. The chronaxie varies with the duration of the contraction; it changes directly as the latent period and is exactly as the rhythm of the tetanus.

Examples of Lapicque's classification of muscles by chronaxie are as follows:

Muscle	Chronaxie sec.	Duration of contraction sec.
Constrictor of the oesophagus (frog)	0.000	10
Constrictor of the common tend.	0.000	
Muscle of the head (toad)	0.005	
Heart of the toad	0.01	
Claw of the crab	0.02	
Biceps of the frog	0.005	10 to 20

The author gives description with diagrams and illustrations of the technique for the measurement of the excitability by the chronaxie of Lapicque. By this technique the determination may be made in man or animals with the same precision as in the nerve or muscle laid bare and separated from the organism.

WALTER C. B. HART, M.D.

Stopford, J. S. B. Re-suturs of Peripheral Nerves. *Brit J Surg* 9, 2, 6.

This subject is of greatest importance in connection with the ulnar or median nerves. In the case of the musculospiral nerve or the sciatic nerve, alternative orthopedic measures offer such good functional results that re-suture is rarely necessary.

Stopford observed fourteen cases during a period of five years. These were as follows: median nerve, five; ulnar nerve seven; musculospiral nerve one; external popliteal nerve one.

Several important factors bearing upon the prognosis are:

TABLE GIVING RESULTS OF RE SUTURE IN FOURTEEN CASES

Abbreviations: PRT, Proximal radial nerve; FSD, Flexor sublimis digitorum; PPD, Flexor profundus digitorum; PLP, Flexor longus pollicis; TCU, Flexor carpi ulnaris; AMP, Abductor pollicis digiti

Case	Nerve injured	Site of injury	Months between date of injury and re-suture	Probable cause of failure after first operation	Result of re-suture
	Metacarpal	Arm		Severed and intraneural fibrosis	Failure
	Median	Elbow		Separation of ends	PRT, P, PPD, PLP show voluntary power. Slight recovery of abduction
	Median	Forearm	3	Intraneural fibrosis	Failure. Subsequent amputation of hand
	Median	Wrist	24		Recovery of abduction and some recovery of interdigital
5	Median	Arm		?	All muscles show voluntary power. Recovery of abduction
6	Ulnar	Arm		?	FCU and interossei show voluntary power. Recovery of abduction
7	Ulnar	Arm		?	FCU, PPD and AMP show voluntary power. Some recovery of abduction
	Ulnar	Forearm	24	Poor technique	Failure
	Ulnar	Elbow	23	Intraneural fibrosis	Failure
12	Ulnar	Wrist		Intraneural fibrosis	FCU, P, P show voluntary power
	Ulnar	Arm		Between leads away	P, P, PPD show voluntary power
	Median	Forearm		Intraneural fibrosis	Failure
13	Ulnar	Forearm	21	Nerve graft	FCU, PPD show voluntary power. Recovery of abduction
	Flexor pollicis	Thigh		Intraneural fibrosis. Infection from test of re-suture	Failure

The interval between the time the injury occurred and the date of the re-suture

The cause of failure after the original suture

1. Poor technique

2. The effect of third section of the nerve trunk upon the cells of the anterior cornu and posterior root ganglion

The conclusions drawn by the author are as follows:

Under favorable conditions, regeneration may occur after the re-suture of a peripheral nerve.

The end results after successful re-suture are similar to those observed after successful accidental suture.

3. The causes of failure seem to be the same as in second re-suture with the addition of (1) greater

disturbance of the intraneural anatomy by the further resection (2) the effect of third injury to the nerve fibers upon the cells in the anterior cornu and posterior ganglia.

4. Including complications, re-suture is contraindicated (1) when more than three nerves have elapsed since the time of the injury (2) the nerve (3) when extensive intraneural fibrosis is encountered (4) the first operation.

5. The imperfect recovery of function and sensation, which is almost invariable after secondary suture or re-suture even under the most favorable circumstances is due chiefly to (1) disturbance of the intraneural anatomy of the nerve trunk (2) the development of intraneural fibrosis.

(LAWRENCE J. JONES, M.D.)

## MISCELLANEOUS

## BLOOD AND LYMPH VESSELS

DeGustano, L. The Etiopathogenesis, Pathologic Anatomy, Physiopathology and Surgical Treatment of True Aneurysms (Etiopathogenesis, anatomopatologica, fisiopatologica, cura chirurgica degli aneurismi veri) *Ann Med chir* 922 4, 593

The method of high ligation should be reserved for cases in which better methods are not applicable.

I high ligation of the artery it is well to tie the vein also.

Up to the present time the method which has been most successful is the removal of the aneurysmal sac. This procedure gives the best assurance against the development of peripheral gangrene and the persistence or recurrence of local pain.

Incision of the sac with ligation of the artery above and below before and after the incision should be resorted to only in the rare cases in which dissection of the sac is impossible.

Lateral suture is indicated after the removal of the sac only if the arterial walls near the orifice of communication are sufficiently normal to insure adequate regeneration of the vascular sheath.

Surgeons experienced in vascular surgery have been obliged to abandon obliterative endo-aneurysmorrhaphy because of the difficulty in mobilizing the rigid thickened walls of the sac for suture.

The use of arterial or venous transplants, which is indicated more definitely in cases of false traumatic and arteriovenous aneurysms, might be attempted but requires great technical skill.

I the present state of our knowledge the surgical treatment of aneurysms should be standardized because it comes within the scope of every surgeon. All surgeons should be proficient in high ligation, the removal of the sac, and removal of the sac followed by lateral suture.

The future will show if the restorative and reconstructive aneurysmorrhaphy of Matas and arterial and venous grafts offer unquestioned advantages over high ligation and extirpation of the sac.

Contrary to the general belief injuries are not the most frequent causes of aneurysms. For aneurysmic dilatation some inflammatory process is necessary. Weakness of the arterial wall may be of mechanical or inflammatory origin but as a rule both factors are responsible. W A BRIDGMAN.

Silbert, S. A New Method for the Treatment of Thrombo-Angiitis Obliterans. *J Am Med Ass* 9 June, 1935

The fibrous scar tissue surrounding the blood vessels in thrombo-angiitis obliterans irritates the nerves or causes secondary nerve degeneration. In the lower extremity the nerves lie beside the blood vessels only below the knee. The femoral vessels do not come in contact with the sciatic nerve.

The various therapeutic measures for the relief of the pain of thrombo-angiitis obliterans include physical procedures to improve the circulation, such as baking, Bier's hyperemia, and exercise and surgical procedures such as arteriovenous anastomosis, ligation of the femoral vein, and the periscular sympathectomy of Leriche. Since the sympathetic supply of the large vessels of the lower extremity comes off from the adjacent nerves at various levels along the course of the vessels there is some doubt as to the value of periscular sympathectomy. Favorable results from prolonged intra-

venous administration of sodium citrate have been reported. Meyer advocates flushing with 8 to 10 liters of Ringer's solution through a duodenal tube and supplementing this with several daily subcutaneous injections and a diabetic diet. A last resort amputation has been done to relieve the pain.

The author advocates the injection of absolute alcohol into the nerve, as far toward the periphery as possible and reports three cases of thrombo-angiitis which were temporarily relieved by such injection of the posterior tibial nerve at the level of the internal malleolus. When an injection into the ankle fails to give relief one or both main nerves should be injected higher, perhaps at the lower level of the popliteal space. In order to prevent paralysis of the large calf muscles it is important to choose a level below the distribution of their nerves.

Under aseptic conditions primary union will take place in the incised, poorly nourished tissues of the ankle. Before it is injected with the alcohol the nerve is exposed and anesthetized with procaine. Paralysis of the intrinsic muscles of the foot is a minor consideration.

The author has treated five patients by the method described. One of these cases was not suitable as extensive gangrene made amputation necessary. In another pain in the little finger was not relieved by an injection of the ulnar nerve in the hand, being due undoubtedly to involvement of the nerve proximal to this point. Three patients have been relieved of pain in the foot for more than six months as the result of injection of the posterior nerve at the ankle.

The author does not claim that the treatment described will cure the disease but recommends it as an efficient palliative measure.

WALTER C BECKETT, M.D.

## INDUSTRIAL SURGERY

Corn, H. R. The Acute Painful Back Among Industrial Employees. *Advised Compensable Injury* *J Am Med Ass* 31 June

Many persons erroneously yet innocently attribute non-traumatic backache to a traumatic cause because of popular opinion associating the two.



Because headache gives no external symptoms patient his anxiety, to prove its existence, apt to exaggerate and claim symptoms not present. This psychological apprehension disappears if he is assured of the surgeon's belief in the presence of the condition.

The author has reviewed a series of 56 cases from industrial hospital. 1. 25 per cent the pain was located in the lower back, below the level of the tenth dorsal vertebra. Certain causes are frankly traumatic while others are clearly non-traumatic. In a third group the conditions might be due to either traumatic or non-traumatic causes. Some of the traumatic cases may have had inherent weaknesses also a factor. The non-traumatic cases illustrate the necessity for complete physical examination.

A potential group consist of cases that present no structural deformities predisposing to symptoms in the event of trauma. This group is composed of persons with hypermobility, symmetrical limitation of motion, or rigid immobility. In some instances the posture may indicate the defect. The patient may give no history of trauma, but may find that he changed his occupation frequently to avoid bearing work. When once the assertion of trauma has been established the patient usually remains compensable. A split of liability at diagnosis. The author gives a good outline of routine examination for use in dispensary work.

Sacro-lumbar relaxation is infrequent and usually brought on by sudden strain on and injured back. Sacrolumbar lesions are intrinsic or extrinsic. The former is the more severe. There is usually muscle spasm which is an attempt to lighten the exaggerated load. (Abstracts of J. Bone and Joint Surg.)

### LEGAL MEDICINE

*Malpractice in Treatment of Fracture of Femur*  
F. M. (V. D.) 85 V. D. p. 7

A physician was employed to reduce fracture of the femur. Fluoroscopic examination showed that the bone was broken diagonally several inches below the elbow.

On account of the swelling the fracture was placed in a sling and after first aid the patient was given. Later attempts were made to reduce the fracture by manipulation. One day after the accident the plaintiff was taken to a hospital where an operation was performed, the tissues of the forearm were separated, the broken bone was placed in position and fastened with wires and the arm put in plaster. When the cast removed a week later the elbow was stiff and up to the time of the trial was still rigid.

The Court held the evidence as sufficient to support judgment for the patient. The physician complained that the verdict of \$3,000 was excessive but in view of the circumstances the Court held it as not so large as to indicate passion or prejudice and therefore affirmed it. (Wills v. Moore.)

*Payment of Surgeon Withheld Because of Alleged Malpractice*  
Haskell v. Hanson (Wash.) 11 V. D. p. 1007

Hanson's index finger on his left hand was cut by a saw. Dr. Haskell amputated the finger and dressed the stump. The stump healed but remained painful. Another operation was then performed. The wound healed properly and the patient did not return for treatment.

When the patient failed to pay his bill for the cost of about six years Haskell brought suit for the amount due. If only sought to defend on the ground of malpractice producing medical testimony that the sensitive condition as caused by the end of nerve or bone projection in the stump of the finger which could probably be remedied by an amputation higher. However no one testified that the physician had failed to operate skillfully or that the sensitiveness resulted from improper medical or surgical treatment. On the contrary it is agreed that such sensitiveness is not unusual and that neither amputation could not certainly remedy the condition.

The Court discovered nothing to show that the physician failed to exercise due skill and diligence and awarded him the full amount sued for.  
Wills v. Moore.

*Suit for Damages for Alleged Failure to Remove Placenta*  
Kraeger v. Hanson 11 (Wash.) 11 V. D. p. 314

The defendant physician in this case was called to attend a woman threatened with miscarriage. He gave the necessary treatment and took her to her home. Three weeks later, four months after delivery, the placenta being called for hours afterwards. With regard to the subsequent facts there was some dispute. The physician testified that he was told that the placenta had been expelled and had been thrown away, but this was contradicted by the woman's husband. At another time during the testimony the physician was told by the husband and his wife that she had severe hemorrhages, pain and headache and on each occasion he gave morphine that she could be allay. In fact his wife's condition then became alarming and he called other physicians who were called. He caused the patient to be removed to hospital. At the hospital the unexpelled parts of the placenta were removed. The patient then improved but died sixteen days later.

The medical experts called to testify differed. Those for the physician attributed the death to embolism while the others attributed it to septicemia due to the presence of parts of the placenta in the uterus. The verdict of the jury was in favor of the defendant of the woman's estate.

The physician contradicted that Mrs. Kraeger did not obey his instructions that although he told her to stay in bed during the entire treatment she attended to her household duties. There was no

evidence however that this was responsible for the miscarriage.

The Court held that the jury could assume that the statements made to the physician regarding hemorrhages, chills, and headache called for treatment or action on his part, and that there was sufficient conflict of evidence as to whether the physician knew the placenta had not been expelled for the jury to determine where the truth lay. The conceded cause of the hemorrhages which persisted so long after the miscarriage was the decomposing placenta in the uterus. The verdict and judgment were affirmed. WILLIAM F. MOONEY

Suit for Damages for the Alleged Leaving of Gauze in the Wound. *Pearce v. Carter* (11) 33 N. H. p. 68.

When the plaintiff was 17 years old she was operated on for appendicitis by the defendant physician. Two months later he opened the wound to discover why it did not heal properly. Soon after and the plaintiff went to the hospital and remained five weeks, but the wound did not heal until several months later. About three years later she was troubled with pain in her foot and after consulting the defendant doctor, went to another physician whose treatment caused the disappearance of the

pain within a few weeks. Subsequently the patient fainted and a few months thereafter consulted another physician, complaining of severe pain in the abdomen. Later she consulted the defendant regarding this pain and he performed an operation. Subsequently another physician and the patient's mother each removed two small pieces of gauze from the wound. Six months later another piece of gauze and a thick pasty material less than 2 in. long were removed. The wound then healed properly.

The defendant testified that the gauze sponges were counted before and after the operation.

The Court held that the operation was performed by the most approved method unless the evidence established that the gauze was not removed. The surgeon testified that accurate count was made, and from other evidence the Court was convinced that the kind of gauze taken from the patient's body was not that used at the hospital at the time of the operation. The plaintiff was a hysteric, and it is a recognized fact that persons of this type have manipulated wounds and placed substances therein.

At least the plaintiff failed to prove by credible evidence that the defendant was responsible for the presence of the gauze later removed. Judgment for the physician was therefore affirmed.

WILLIAM F. MOONEY

# GYNECOLOGY

## UTERUS

Cullen, T. A. The Use of Sutures as Tractors in the Vaginal Operation for Prolapse. *Am J Obst & Gynec* 1: 314

The thoracic chronic catgut sutures as tractors in the vaginal operation for prolapse. These sutures are of the figure-of-eight type and are placed in the body of the uterus after the peritoneum has been opened. They are all tied each successively lowest on being used as a tractor. The end of the suture are then reintroduced external through the peritoneum and vaginal wall and left untied until the cervical stump is amputated and the vaginal mucosa is sewed to it by figure-of-eight sutures. The result of this method has been excellent.

The article is well illustrated.

J. L. Cowie, M.D.

Nylander, A. J. Restoration of the Round Ligament in Retraction of the Uterus. *Med J London* 191: 877

The author splits the anterior peritoneum parallel with the round ligament and a little toward the bladder for undermining the edges and leaves the opening with permanent closure. The outer limit of the suture is on the lateral abdominal ring and the inner limit near the uterine corn. The procedure pulls up the bulk in the broad ligament as well as that in the round ligament. Nylander has used this a number of cases with very good results. *Br J Gynaecol*, M.D.

Higgins, R. R. Pre-Cancerous Conditions of the Cervix Uteri. *Am J Obst & Gynec* 9: 1435

It must be called an ulcer term which is an increase of tissue in this condition, it should be described as a sessile adenoma. The gland part of the cervix is normally covered with many layers of a squamous epithelium continuous with that of the vagina. At or near the extremity become bumpy suddenly becomes cubical and is in fact the columnar glandular epithelium which lines the cervix and the body of the uterus and consists of a single layer of tall cells. These cells are continuous with the glands of the cervix which are numerous and lined with a single layer of columnar epithelium. The glands of the cervix are more deeply cleft and larger than the glands of the uterus. In fact, the cervix is itself a gland and a structure quite apart from the body of the uterus. It is in connection with these glands or the columnar glandular epithelium lining the cervical canal that the pathology of erosion is of interest.

The red patch which is so typical is due to an overgrowth and hyperplasia of the columnar epithelium the cervical canal which spread over and grow through the squamous epithelium normally covering the vaginal portion of the cervix. It is noted, not in destruction of tissue but by the replacement of deep columnar cells over wider area than normal. The bright red color is due to the fact that the surface is covered by only a single layer of cells which allows the bright color of the underlying blood vessel to show through. It returns to the normal occurs it comes from the removal of the surface by the normal squamous cells of the vaginal mucous membrane. When it happens the deep cells glandular in type become bumpy and covered over. They are at function being to secrete the formation of cysts in a cystic glandular area of small mucous cysts in or upon the surface of the cervix or extend deeply into the tissue of the cervix. These are the tracers of the tumor of the cervix. The most frequent of these noted in this condition is the tendency to change.

The presence of cysts scattered throughout the cervix is common but their extent is often not appreciated until it is revealed by amputation or excision.

The cervix is a bony structure and has reached the age of 20 years should be examined by dissection of the cervix. If such dissection is found it should be treated. In some cases the treatment may be palliative but often best is the removal of the diseased tissue. It must be borne in mind that never begins in small way perhaps in one single cell and that while the cervix is present but slight evidence of disease this may be sufficient in the presence of excision and local treatment to cause cancer. *J. L. Cowie, M.D.*

## ADnexAL AND PERI-UTERINE CONDITIONS

Sampson, J. A. The III History of Ovarian Hematomas (Hemorrhagic Type of Endometrial Muellerian Type). *Am J Obst & Gynec* 10: 1

It is known that of the terms the pathological condition arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneum. It is probably the most common pelvic lesions found in women between the ages of 30 and the menopause. During the last century there were cases of such lesions are found by the author in 70 abdominal operation for pelvic conditions in women between 10 and 50 years of age. If the epithelium escaping from the tube fall on sterile tissue it develops into glands or lobules of endometrial (muellerian) type which generally react to menstruation. These adenomas are usually found

on the structures which are most frequently in close contact with the fimbriated ends of the tubes, such as the lateral and under surfaces of the ovaries and the peritoneal surface of the structures in the cul-de-sac. Implantation adenomata may occur only on the surface of the ovary or ovaries, both in the ovaries and on the pelvic peritoneum, or on the pelvic peritoneum alone.

The primary peritoneal implantations are usually small and insignificant but may spread and become invasive.

The implantations on the ovary invade the tissues of that organ and, as a result of their reaction to menstruation, develop into superficial or deep hematomata (hemorrhagic or menstruating cysts) of endometrial (muellerian) type. The casting off of all of their epithelial lining by menstruation may cause their destruction before perforation occurs, but most of them rupture or perforate into the peritoneal cavity. Perforation occurs in the superficial ovarian hematomata while they are still small, a few millimeters in diameter and as the result of menstruation and perforation the entire epithelial lining may be cast off and the hemorrhagic cyst may disappear.

The hematomata developing in the deeper tissues of the ovary may attain a large size, several centimeters in diameter, before perforation occurs. As the menstrual blood is retained in the cavity of the hemorrhagic cyst and in the stroma of its lining for long time, many interesting histologic changes occur in the wall of the cyst in the attempt to absorb the menstrual blood and to refine the denuded surface by epithelium from that which had not been removed by menstruation. The development and activities of the endothelial leukocytes, which act as scavengers, play an important part in the absorption of the menstrual blood and the deposit of pigment derived from this blood in the walls of the hematomata. Perforation permits the contents of the hematomata to escape into the peritoneal cavity and temporarily relieves the embarrassment caused by its retention. The perforation is sealed by the adherence of the ovary or cyst to adjacent structures. The hematoma again fills up with blood and its reaction to menstruation, and repeated perforations may occur. As the reaction to menstruation is destructive, and as the repair and regeneration of the epithelial lining is accomplished under great difficulties because of the retention of the menstrual blood, the ultimate tendency of the hemorrhagic cyst is retrogression.

In its reaction to menstruation portions of the epithelial lining are cast off into the cavity of the hematomata, and therefore may be found lying free in its hemorrhagic contents. Adenomata of the endometrial type may be on the surface of the ovary about the perforation and in the tissue of the structures adherent and adjacent to it as well as in situations where the material escaping through the perforation lodges. This indicates that these adenomata may be derived from the implantation of

epithelium cast off by menstruation into the cavity of the hematomata and escaping through the perforation. Implantations may arise from small as well as from large ovarian hematomata, generally the larger the hematoma and apparently the larger the perforation, the wider the distribution of the implantations. These secondary implantations often resemble normal endometrium more closely than the epithelial lining of the original ovarian hematoma and are often more invasive and more closely resemble normal endometrium than the implantations found in the pelvis without evidence of an ovarian hematoma with perforation, those resulting from a primary implantation from or through the tube. For these reasons the theory holds that in the development of pelvic implantation adenomata of endometrial type the ovary is an incubator or intermediary host which, sometimes may possibly impart greater virulence to the epithelium developing in it. However, it is not an essential intermediary host in the origin of all implantation adenomata of endometrial (muellerian) type.

It is possible that primary ovarian and peritoneal implantations (those developing from epithelium escaping from the fallopian tube) arise from both tubal and uterine epithelium. This was suggested by the specimens studied by the author. Histologically these implantations may be divided into three groups. The first are those consisting of glands or tubules and dilated tubules which often are lined by ciliated epithelium and are without the characteristic stroma of normal endometrium, or show stroma poorly developed. The structure resembles that of the mucosa of a primary adenomyoma of the tube and strongly suggests that the implantations might have been derived from the epithelium of the fallopian tube. The second group the adenomata consist of stroma and glands similar to those of normal endometrium. The histologic picture strongly suggests that these were derived from uterine epithelium escaping through the lumen of the fallopian tube from menstruation with a back flow into the peritoneal cavity or from portions of tubal mucosa which had reacted to menstruation. In the third group the picture suggests a mixture of adenomata of tubal and uterine type or represents transitional stages from one to the other.

The epithelium of the ovarian hematomata or hemorrhagic cysts may also suggest either a tubal or uterine origin.

It comes with implantation adenomata in the pelvis associated with an ovarian hematoma showing evidence of perforation both primary implantations from or through the fallopian tubes and secondary implantations from the ovarian hematoma may be present, but the latter probably predominates a rule.

It is difficult to determine the factors which favor the implantation and growth of tubal and uterine epithelium on the surface of the ovary and on the peritoneum. As implantations result from the per-

formation of the ovarian hematoma containing venous blood, this may be an important agent in facilitating the development of these implantations. Therefore menstruation with a back-flow through the tubes into the peritoneal cavity may be an important contributory factor. The implantations are frequently found in patients with retroflexion of the uterus, leiomyomata, and uterine polyps, conditions which when the tubes are patent, might favor retrograde menstruation.

The reaction of the lining of ovarian hematomata of endometrial type to menstruation, pregnancy (one case) and old age (1 case) is similar to that of the uterine mucosa.

The author believes that the implantation adenomata in the ovary derived from tubal and uterine epithelium are the source of many ovarian cysts and carcinomata and is convinced that two of the latter in the cases studied arose from this source.

E. L. CORVALL, M.D.

HOOVER, M. R. Solid Carcinomas of the Ovary. Surg. 92, 1914, 766.

Thirty-seven cases of solid carcinomas and 2 cases of solid sarcomas of the ovaries are found in the examination of malignant tumors of the ovary at the Mayo Clinic between January 1, 1909, and August 1921. These tumors were solid throughout or contained only relatively small cysts due to degeneration and necrosis or retention. All cases of benign or malignant ovarian cysts, dermoids, etc. were excluded. As during the same period of time 4175 tumors of the ovary are removed, the malignant tumors constituted 93 per cent of all ovarian neoplasms. During the same period 920 malignant ovarian tumors are removed, and of these 9.66 per cent are solid.

The most common symptoms are pain, tumor ascites, loss of weight and strength, anorexia, and bladder and rectal disturbances. Pain, which is present in thirty cases, varied in type and location. As a rule it was located in the lower abdomen and pelvis, but occasionally occurred in the lumbar or sacral region of the back and radiated down the groin. It was usually described as a constant dull ache or a burning down or dragging sensation. Occasionally it was sharp and severe because of twisting of the pedicle. It then resembled the colic due to renal or ureteral calculus. Twenty-two of the patients had tumors. Twenty cases the tumor was discovered by the patient herself in seven cases it was discovered by the family physician and in ten it was not discovered until the time of examination at the Clinic. The general health of thirty-five of the patients was below normal or very poor. Light

feels had loss of weight ranging from 5 to 30 lbs. Frequency, burning, painful sensation with pain, and pressure are the most common symptoms.

Physical examination usually revealed the tumor in the pelvis. Often it extended above the brim and it times it almost filled the entire abdomen. Fixation in such cases may be due to extension of the growth to the pelvic wall or adjacent viscera, or to inflammatory adhesions. The blood picture shows varying degrees of secondary anemia as in only seven in other parts of the body.

The clinical diagnosis of solid carcinomas of the ovary is rarely made definitely. As a rule the surgeon must call for the pathologist's diagnosis. The differential diagnosis includes the consideration of benign and malignant ovarian cysts, ovarian fibromata and dermoids, fibromata of the uterus, retroperitoneal tumors, and tumors of a displaced kidney.

Exploratory operation should be offered to all patients, even when there is ascites, unless metastases can be definitely demonstrated. Palpation of an enlarged nodule, liver enlarged, hard, ingested or pelvic glands or extension with induration of the broad ligaments indicates conditions which cannot be relieved by operation. Roentgenograms of the breast and pelvic bones make it possible to detect metastases in these regions. When metastases are present radium and the roentgen ray may temporarily relieve the pain, but suffering and prolong life for short time. Periodic abdominal paracentesis may be necessary on account of the rapid accumulation of fluid. Cases suitable for surgery postoperative applications of radium in the abdomen and rectum and applications of the roentgen ray to the abdomen and back are of value if recurrence is feared because it is impossible to remove all of the malignant tissue. When recurrence takes place, radium and the roentgen ray are of little value even as palliative measures.

The prognosis of solid carcinomas of the ovaries is comparatively poor. Formerly this tumor was believed to be relatively benign, but recent reports agree that it is more malignant than as indicated by previous reports. Of the patients whose cases are reviewed in this article only three are living and all after the five year period the length of time since the operation being five, one and one-half, and one-half and one year respectively. There are living and all after three years, ten after 1 year, 10 after eighteen months and 10 after ten months. Six patients died within six months, nine within one year and four after 1 year.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

Norman, C. C. and Murphy D. P. Pregnancy in the Tuberculous with the Report of 144 Cases. *Am J Obst & Gynec* 9: 14 1917

The conclusions drawn by the authors from the study of the 144 cases reviewed are as follows:

1. The combination of pregnancy and pulmonary tuberculosis is common.

2. Pulmonary tuberculosis exerts little or no influence against conception.

3. Pulmonary tuberculosis exerts but little influence on the course of pregnancy and except in the advanced stages exerts little or no influence toward causing abortion, miscarriage or premature labor.

4. About 20 or 30 per cent of cases of mild quiescent pulmonary tuberculosis and 70 to 90 per cent of more advanced cases exhibit exacerbations during pregnancy or the puerperium.

5. Marriage is one for the tuberculous woman than for the tuberculous man because of the dangers incident to pregnancy.

6. Unless the pulmonary lesions have been quiescent for a moderately long period the tuberculous woman should not marry.

7. Tuberculous women should not become pregnant unless the disease is in the first stage and has been quiescent for a minimum period of 1 year.

8. It is as yet impossible to determine with certainty which case will bear the added strain of pregnancy well and which will not. Moderately extensive lesions, extension, especially to the larynx, loss of weight, fever, hemorrhage, sweats, lack of vigor and inability to obtain proper treatment are unfavorable.

9. Prior to the fifth month of pregnancy the uterus should be emptied if there is any indication that the disease is becoming active. Curettage during the first six or eight weeks, and in the later cases vaginal hysterotomy are the methods of choice. It must be remembered, however, that abortion can be induced without the induction of general anesthesia and that the necessity for the use of a general anesthetic in vaginal hysterotomy must outweigh the advantages of the procedure.

About 65 to 70 per cent of suitable cases will be benefited by this treatment provided it is employed as soon as acute symptoms arise and proper after treatment is instituted. Late intervention, a week or more after the onset of the exacerbation, has given less satisfactory results.

Sterilization is not justifiable as a routine procedure. Furthermore, as a routine procedure it is not advisable as in many cases it will be more expedient to empty the uterus without the use of an

anesthetic. Apart from the dangers of a general anesthetic sterilization prolongs the operation and generally adds to its gravity. If the patient's condition is poor it is useless and if she improves, as a result of the emptying of the uterus, it is better to perform the sterilization at a later date when she is in better condition.

10. After the fifth month of pregnancy it is generally advisable to treat expectantly. Labor should be made as easy as possible. The induction of labor two weeks before term may be desirable rarely if ever should the patient be allowed to go beyond term. During labor the use of forceps or version is often indicated.

11. Infants should not be allowed to nurse from tuberculous mothers, and should be especially guarded from infection.

12. Hygienic and dietary treatment should be employed at all times. The patient should be kept under close observation and examined by a competent internist at regular and frequent intervals.

13. In the great majority of cases, even in those in which the symptoms are first observed during pregnancy the tuberculosis preceded the pregnancy.

E. L. COWLEY, M.D.

## LABOR AND ITS COMPLICATIONS

Haskell, C. C., and Rucker M. P. The Action of Ergot and Solution of Hypophysis on the Uterus. *Am J Obst & Gynec* 9: 14 1917

From the findings of experiments it seems fairly safe to conclude that pituitary solution affects the uterus of the cat and the dog more powerfully than ergot and is more apt to cause either tetanus or an increase in tone which is similar in its effect to intra uterine pressure. Therefore in the early stages of labor it is more dangerous than ergot.

In no clinical case did the use of ergot elicit tetanic contractions of the uterus, the first stage of labor. This is at such variance with expectations based on clinical experience that the authors are at a loss to interpret their results. At first they were inclined to assume that the drugs used were inert but this was disproved by testing them upon animals and by the fact that the results obtained with their lots of ergot were practically the same. They therefore conclude that there is a great deal of variation in the response of human uterus to ergot and pituitary solution and that the disastrous results sometimes following the use of these drugs occur in cases in which the uterus is particularly sensitive to their effects. The authors have found such uteri in their work with animals. A certain number of cases may be attributed to the sensitization of the uterus by repeated doses of ergot as

noted by Edmunds and Hale. The authors have seen no such phenomenon in clinical cases but in the laboratory have noticed a marked variation in the response of the same uterus to ergot.

Next to the ease and promptness with which a tetanic contraction of the uterus is elicited by pituitary solution, the most interesting feature of the action of this drug is the variation in the latent period. It has often been noted clinically that the effect of the solution is the more prompt and energetic the closer the patient is to term. This has been borne out by the authors' observations. When it was necessary to induce labor in the seventh month the latent period was ten minutes, while at term it was ten minutes. In the third stage six minutes elapsed after the injection of the solution before response was noted, while after the delivery of the placenta the latent period was eight minutes.

The authors' conclusions are as follows:

It can be readily demonstrated by animal experimentation that the action of ergot and pituitary solution upon the uterus is the same if the doses of ergot used are sufficiently large.

The action of pituitary preparations is much more powerful than that of ergot. This is readily shown both by experiments upon animals and observations in clinical cases.

It is common clinical finding and abundantly proved by laboratory experiments that the action of both drugs varies greatly in different persons.

E. L. CORVILL, M.D.

Kosmak, G. W. Intra Uterine Rupture of Telomeres Umbilical Cord. *Am J Obst & Gynec* 932, 69

A primipara in the eighth month of pregnancy had gone through a mild degree of toxemia of the nephritic type which had responded favorably to treatment. The placenta prevented infant formation.

Such undoubtedly led to its separation. The administration of castor oil as probably contributory factor. With the separation of the placenta there was laceration of portion of the telomeres cord. It is probable that the sudden gush of blood came from the placenta as there was insufficient dilatation of the cervix and no evidence of placental separation at the lower pole (account for a hemorrhage of this severity). A fact of interest is that the patient did not experience the pain usually associated with premature separation of the placenta. The baby died from asphyxia due to the intra uterine hemorrhage from the cord. The telomeres cord as inserted at the upper pole of the placenta. Bacteria in most of the reported cases this anomaly was present in the region of the cervix and rupture occurred as the cervix dilated. The patient made an uneventful recovery after cesarean section. The wound healed by primary union and there was no shock. Subsequent examination of the uterus disclosed nothing abnormal.

The frequent association of telomeres cord insertion with placenta previa should be borne in

mind. Irregular bleeding at the end of the first stage of labor should lead us to suspect this condition if lateral placenta was believed to be present and was not found on careful examination, especially when the presenting part is well engaged.

With regard to the treatment the author states that when the accident occurs in premature and is associated with such a severe hemorrhage as in the case reported, due to another cause, cesarean section is the method of choice.

E. L. CORVILL, M.D.

## PUERPERIUM AND ITS COMPLICATIONS

Piper, E. B. The Treatment of Puerperal Sepsis by the Use of Mercurochrome. I. Intravenously, With Report of Animal Experimentation in Chemical Disinfection of the Blood. *Am J Obst & Gynec* 933, 53

A 1 per cent solution of mercurochrome is prepared with sterile distilled water. As it has been shown by other investigators, which the author experiences corroborates, that the drug soon loses its strength, it is always freshly prepared just before it is to be used and put up in 10- to 20-cc ampoules. The solution should never be employed unless it is absolutely clear. It is injected very slowly by means of fine needle and large syringe at temperature as near 100 degrees F as possible. Formerly the patient was given doses of magnesium sulphate at the end of each hour, but this is no longer done as it appears to eliminate the drug before it has chance to exert its germicidal effect. Heat is applied externally for the chill, and heating mixture is given as an intestinal sedative to overcome the discomfort if it continues long. A careful record of the excretion of urine is kept. The administration of the mercurochrome may be repeated, but is never done as long as there is any sign of dye in the urine or feces. As many as five doses have been given. Occasionally salivation occurs.

The reaction following the intravenous injection of mercurochrome is analogous to that observed after the introduction of serum, bacteria, or sterile milk by similar route and can probably be explained in the same way. Some of the action of the drug may be due to the immunization or inhibition of the circulating bacteria, possibly also to their direct destruction by the drug, as in the test tube, aided by the increase in the leucocytes which also accompanies reaction following an injection. It is possible also that mercurochrome reduces the number of circulating organisms by combining them where the infection localizes. The chemical is of the greatest value in local infection.

The conclusions drawn by the author are as follows:

There are certain cases of puerperal sepsis so fulminating and virulent that no treatment can save life.

The use of antistreptococcus serum has appeared to be of great value in some cases. Frequently

repeated small blood transfusions and certain methods of intravenous medication are of benefit

3 A solution of mercurochrome given intravenously in the proper dosage appears, in some cases, to be of great value and to have no deleterious effects

4 Puerperal septicaemia is so serious that heroic measures are justified E. L. CORVILL, M.D.

Bruett H: The Surgical Treatment of Puerperal Gas Bacillus Infection of the Uterus. *Physiometra* (Beiträge zur Kenntnis und zur chirurgischen Behandlung der puerperalen Gasbrandinfektion des Uterus Physiometra) *Arch f Gynakol* 9 CXV.

The pathologic anatomy and the clinical aspect of gas bacillus infection of the uterus are described in detail on the basis of six cases. Frankel bacilli are demonstrated as the excitants in every instance. Removal of the uterus resulted in a cure in only one case.

The typical clinical picture of general gas bacillus infection with pronounced icterus was present in only one case. In three cases icterus was entirely absent in the beginning, but appeared in the subsequent course of the disease. In one case the gas bacilli are not demonstrated in the blood until just before death. In many cases the urinary findings are of great importance in the diagnosis. In very severe cases the urine is almost black and has the consistency of varnish. It may also contain gas bacilli. The route of dissemination of the gas bacilli is almost exclusively along the lymph channels.

The prognosis of surgical treatment in cases of puerperal gas bacillus infection may be considered as relatively favorable if general infection does not result. In gas bacillus peritonitis without general infection the results of drainage are not entirely unfavorable, but in general gas bacillus infection without symptoms of peritonitis operative interference is usually futile. TRAILER (Z).

#### NEWBORN

Joyce C. Patent Foramen Ovale. *Med J Australia* 9 II, 529.

The author reports two cases of patent foramen ovale. One was that of a female child of six months who had severe bronchitis with a patch of pneumonia at the base of the right lung. Cyanosis had been present since birth. A systolic murmur was heard all over the chest and the apex beat at the fifth inter-space on the right side. The abdominal viscera were in normal position.

The other case was that of a girl of 9 years who had always been very poorly nourished and when examined by the author was extremely emaciated. This patient also had been cyanosed since birth. A diagnosis of pneumonia of the right lung and a patent foramen ovale was made.

In the first case only water was given during the febrile period, and in the second only water and orange juice were allowed. Both patients recovered. The author states that he has never regretted the use of the starvation method of treatment during the febrile stage of disease. R. E. CHAMBER, M.D.



# GENITO URINARY SURGERY

## ADRENAL, KIDNEY AND URETER

Keller O. Traumatic Subcutaneous Rupture of the Kidney (*Sur la rupture sous cutanée intrinsèque du rein*) *Arch de med et de chir et d'organe génie* *Paris* 1910; 9: 4, 37

Subcutaneous traumatic rupture of the kidney is a rare lesion being found in less than 1 per cent of surgical cases. According to Keller the records of the Municipal Hospital of Copenhagen show forty-three cases in a total of 83,000 surgical cases treated during the last twenty-six years. The right kidney appears to be more frequently involved than the left, and the condition occurs much more frequently in men during the working years than in women or children.

The rupture may be direct or indirect. The majority of the cases referred to by Keller are direct injuries. A direct rupture is due to compression of the organ by the thoraco-abdominal wall and associated internal hydrostatic pressure in the kidney. Frequently the twelfth rib is fractured by its compression against the transverse process of the first lumbar vertebra.

The lesions may be classified according to their degree and extent as: (1) superficial lesions of the capsule and cortical substance not involving the calices; (2) ruptures involving the calices or the pelvis, which are generally localized on the posterior surface of the kidney; (3) complete crushing of the kidney which is generally associated with other severe injuries; (4) injuries of the pedicle or the pelvis, which are often combined with some of the foregoing conditions.

The most common complication is fracture of the twelfth rib, but other ribs also may be fractured. Another common complication is peritoneal rupture with the discharge of blood and urine at the cavity.

The general symptoms of syncope and shock mask the local symptoms in many cases, even when the injury is severe, the subject may be able to walk and to work. On the other hand, a slight rupture may be followed by immediate collapse. Vomiting may be the first sign of peritoneal injury. The local signs are skin abrasions at the point of injury swelling in the lumbar region, and dullness on palpation when an effusion collects. The kidney is sensitive to pressure and the pain is lancinating and colicky.

Hematuria occurred in 95 per cent of the reported cases. It does not indicate the extent of the hemorrhage, and in the extremely serious cases, such as those in which there is total rupture of the pedicle or the ureter or the pelvis of the kidney is obstructed by clots, it may not be observed. Traumatism may be followed by pyelitis or complete anuria.

When hematuria is present it may be very difficult to refer it to the kidney rather than to the bladder unless there are other symptoms. On account of the risks of infection, cystoscopy is possible only in cases which are to be operated upon immediately. Hematuria therefore is of only relative value as an indication of the gravity of the condition, peritoneal tumefaction and effusions are of greater importance.

According to different authorities, the mortality of non-complicated traumatic subcutaneous ruptures of the kidney varies from 5 to 7 per cent. The principal dangers are hemorrhage and infection, which are responsible for 45 and 4 per cent of the deaths respectively.

Up to 1876 the treatment was usually non-operative. The first nephrectomy for this lesion was done in 1835. Slight injuries should be treated conservatively, operation being reserved for those which are in imminent danger.

1,473 cases have been treated, cases reported as the literature up to 1908 there were forty deaths from hemorrhage, thirty-eight from infection, and none from other causes. The opinions of surgeons vary greatly as regards the indications for operation and the time at which it should be performed. In the conservative treatment the risk of hemorrhage, infection and other complications are greater than in operative treatment.

The majority of surgeons do not hesitate to operate when peritoneal injury is associated with the renal injury. The most suspicious time is immediately after the cessation of the initial shock. Nephrectomy is indicated in cases of (1) pedicle lesions causing trophic disturbances, (2) extensive infection, (3) contusions destroying all functional tissue and (4) lesions necessitating quick operation. Conservative operation consists of tamponade, returning and drainage or nephrotomy.

Short histories of forty-three cases collected by the author are given. In six of these cases in which nephrectomy as done there were four deaths. 7 patients treated by nephrotomy recovered. 1 of the three cases not operated upon there were four deaths. W. A. BARRY.

Figures, H. The Surgery of Horseshoe Kidney (*Sur la chirurgie des reins en fer de cheval*) *Arch de med et de chir* 1912; 10: 4, 7

The number of cases in which anatomically non-pathologic horseshoe kidneys are divided in the presence of the Rorring syndrome is increasing. In the case reported by Eggers the symptoms pointed to a concretion and infection in the pelvis of the left kidney. A malformation of the kidney was not suspected. After the removal of the stones by

pyelotomy it became apparent that the ureter passed over the lower pole of the kidney and that nephropexy was indicated to improve excretion. The left kidney was connected to the right by an isthmus 3 cm wide and 0.5 cm thick.

The division was done without difficulty with the use of two clamps and cauterization of the cut surfaces with the Paquin cautery. From the drain there was only a slight transient discharge with a urinous odor. The kidneys did not rebound to the normal sites after their division, as in Rossignol's case. A subsequent pyelographic examination revealed dilation of the right renal pelvis and a low position of the kidneys. Fixation of the right kidney was not attempted during the operation because it was regarded as advisable to wait the operative result on the left kidney on account of the presence of urinary infection. The result was completely successful on the left side but on the right side there was incarceration of the kidney which required correction by nephropexy.

The author assumes that the abnormal course of the ureter is least favored, if it did not cause the dilation of the pelvis of the right kidney and the stone formation in the left. Therefore in every case of pathologic horseshoe kidney the course of the ureters should be determined and unless serious lesions necessitate the extirpation of one half of the kidney the division of the isthmus should be followed by nephropexy.

J. VARELA (Z)

Weeks, E. Cystic Kidney (Cystennere).  
*Lancet* 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 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Bium, V. The Diagnosis of Small Concretions in the Renal Pelvis and Ureter (Zur Diagnostik kleiner Konkretions im Nierenbecken und Harnleiter) *Ztschr f urol Chir* 912, 2, 238

In cases of stones in the kidney and ureter the number of incorrect and doubtful diagnoses based on roentgenograms is no greater than 10 to 5 per cent, but it is just in these cases that the determination of the renal disease and the causes of the attacks of pain is most difficult.

The demonstration of concretions depends upon the shadow picture in the plate. The identification of the shadows—as those of renal and ureteral stones and the accurate determination of the position of the stones. A stone may be invisible in the roentgenogram because of its small size or its chemical composition, because it lies in a cavity filled with fluid, or because there is an excessive development of fat in the region of the kidney.

Conditions causing shadows in the kidney region and along the course of the ureter which may lead to errors in diagnoses include calcified glands, phleboliths, calcification of the pelvic ligaments, artefacts on the roentgen plate, and foreign bodies in the lumen.

Concretions smaller than a corn of seed are difficult to find in the roentgenogram if the subject is fat, but may be the cause of typical colic and haematuria.

In every pyelotomy for a visible concretion the entire surgical pelvis of the kidney should be sounded with suitable instruments in order that all small concretions present may be discovered. Uric acid stones, which are permeable to the rays, may be demonstrated by impregnating them with collargol (Kuemmell), by inflating the renal pelvis with air and by pneumoconography of the kidney bed. As stones in a cavity filled with fluid may escape roentgenological demonstration, second examination should be made after the residual urine has been emptied from the renal pelvis and the bladder.

In every case in which clinical observation suggests the possibility of stone formation the combination of radiography with the introduction of shadowgraph catheter and pyelography is recommended for the identification of suspicious shadow formations with stones lying in the region of the kidney and in the course of the ureter.

CHADMAN (2)

Cliniciana, A. The Transplantation of Free Muscle into the Nephrotomy Wound (Freie Muskeltransplantation in die Nephrotomiewunde) *Ztschr f urol Chir* 9 11 433

Of the various operations on the kidney, nephrotomy is followed by the greatest number of fatalities from secondary haemorrhage. The incisions planned to avoid section of blood vessels (Zondeck, Hirsch, Marxwedel) have not been successful in improving the conditions. The statistics of Tachikawa based on ninety cases of secondary haemorrhage after nephrotomy

only show that secondary asphrectomy was necessary in forty-one cases, and in spite of this procedure eight of the patients died. Of forty-one patients treated conservatively fifteen died. Packing prevents an immediate secondary haemorrhage but may become loosened. It also interferes with primary healing of the wound. Experiments have been made with resorbable packing material such as fat and fascia, by Kuemmel. Not only a mechanical but also a thrombotic effect has been ascribed to this material.

Muscle substance has been applied to arrest haemorrhage from bone cavities (Schulze), the cranial bones (Borchardt), sinuses (Studz) and wounds of the heart (Larven). In experiments on twenty dogs the author packed nephrotomy wounds with perforated and free muscle flaps. The implanted muscle flaps healed into the incisions in the kidney relatively rapidly even when the renal pelvis was opened. The flap then became necrotic and organized without any signs of regeneration, while sections projecting into the pelvis of the kidney become necrotic throughout.

From the surgical and functional standpoint it was interesting to note that only a few sutures are necessary for complete haemostasis, the kidney was not injured by the operative procedure or the loosely knotted sutures and the functional test of the kidney operated upon was satisfactory. The parts of the transplant which projected into the pelvis of the kidney became necrotic and macerated by the urine and passed off. Between the muscle substance which had healed in as replaced by connective tissue.

The transplant was taken from the extrarenal branches of the back.

The procedure described has not yet been applied to man but it is recommended for aseptic cases in which medium large incision is made in well preserved parenchyma, such, for example, as cases of very small stones in the pelvis of the kidney.

JANUARY (2)

Hanner G. L. Ureteral Stricture As Important Etiological Factor in the So-Called Essential Haematuria *J Am Urol Ass* 19 11 13

Hanner reports his experience with cases of renal haematuria of the so-called essential type. He calls attention to the fact that we are indebted for our present knowledge of the subject to the work of Israel. Most cases have followed Israel in ascribing the severe attacks of pain and macroscopic haematuria to heightened intrarenal pressure due to rupture of the capsule, circulatory stasis, or inflammatory congestion or combination of these factors. In every instance there is a background of focal diffuse interstitial or parenchymatous nephritis.

The object of this article is to call attention to the important rôle that ureteral structure probably assumes in many of these cases. Hanner refers briefly to his experience with ureteral structure in

the causation of various nephropathies and at times that in eighteen of his cases of essential haematuria ureteral stricture was demonstrated.

Israel's main conclusions, ten in number are stated and briefly commented upon in an endeavor to establish a new point of view as to the etiology of the nephritis in a large proportion of these hitherto imperfectly understood cases.

A careful analysis of Israel's fourteen cases leads Hamner to the conclusion that ureteral stricture as probably present in eleven.

Hamner emphasizes the fact that symptomless renal bleeding is often due to renal tumor. While exploratory operations for the determination of the cause of the hemorrhage should be less frequent in the future one should not hesitate to explore a bleeding kidney without delay if even but attempt at diagnosis has failed and the bleeding does not respond to the treatment for idiopathic haematuria.

In sixteen cases a good opportunity was offered to study the results of ureteral dilatation in the treatment of the haematuria. In two nephrotomy, as done while fourteen were treated by cystoscopic methods. None and the care of local infection such as the teeth and the tonsils. In six cases there was recurrence of the condition but in these the presence of residual foci of infection was suggested. In ten cases, including one in which nephrotomy was done there has been no recurrence. In the later cases no treatment other than was ureteral dilatation of the stricture was given.

The article is illustrated by numerous pyelograms. H. A. FOWLER, M.D.

Giordano, A. S. and Burmpus, H. C. J. Carcinoma in the Uretropelvic Junction: Metastasis from the Prostate. Report of a Case. *J. Urol.* 9: 445.

Metastasis from carcinoma of the prostate gland is usually detected first in the lumbosacral region. Of a series of 197 cases in which roentgenograms were made eighty-four (8.4 per cent) showed metastasis in the bones. The next most common sites of metastasis are the lymphatics which drain the prostate and the course of the large pelvic blood vessels along which are several groups of lymph nodes. The nodes at the bifurcation of the iliacs are usually the first to become involved. From there, the lymphatic chain goes directly to a second group located on the sacral promontory and then along the perivertebral nodes. Extension by this route often occurs so rapidly that the supraceliac lymph nodes are involved before the original malignancy is suspected.

In about 8.4 per cent of the patients in whom metastasis is demonstrable the lymph nodes on the left side of the neck are affected. Enlargement of these lymph nodes suggests that the stomach is the original focus particularly in the per cent of cases in which malignancy of the prostate does not cause urinary symptoms.

A form of metastasis which occurs only rarely in carcinoma of the prostate is metastatic in olivine of the abdominal viscera through the blood stream. In this case reported in this article, metastases were found in the periprostatic and vertebral lymph nodes and in the left kidney and the ureter close to the renal pelvis. After the application of 45 mg-hrs of radium the patient, a man aged 63 years developed marked gastric, intestinal, and cardiac symptoms, failed rapidly and died on the sixth day.

At autopsy numerous metastatic nodules were found scattered throughout the pleura and lungs. The perivertebral lymph nodes along the lumbosacral region were extensively affected and covered the aorta from the bifurcation to the first lumbar vertebra. The left kidney weighed 30 gm. In its upper pole was an infarct which was found on serial section to be due to metastatic carcinoma cells plugging a small blood vessel. The grayish nodules discovered at the ureteropelvic junction are composed of the same type of undifferentiated epithelial cells.

The bladder did not present any gross abnormalities except a rough granular area about 3 cm in diameter in the base which was found on section to be direct carcinomatous infiltration. The prostate gland was moderately enlarged and could not be shelled from its bed. It was firm in consistency and its cut surfaces were gray and granular. The lymph nodes surrounding the prostate are also infiltrated by carcinoma cells. Careful examination did not reveal metastasis to the bone.

The history and the clinical and laboratory findings of this interesting case are given in detail. The above conclusions are summarized briefly as follows.

The metastasis to the pelvis of the kidney in this case may be interpreted as illustrating the direct lymphatic connection to the prostate bladder and the kidney and may be considered evidence that infections of the bladder reach the kidney not by the lumina of the ureters, but by the lymphatics. However this does not seem probable, as the lymphatics of the ureters were not involved. Moreover so far as we know this is the only case reported in the literature in which carcinoma of the prostate metastasized to the renal pelvis. This extreme rarity should be strong presumptive evidence that direct lymphatic connections between the lower and upper urinary tract do not exist and that infection does not travel in this manner. Otherwise with the large number of neoplasms of the bladder and prostate metastases to the kidney would occur more often.

In this case the presence of the cancer cells in the blood vessels of the lungs and the metastatic renal infarct could seem to demonstrate that the malignancy was carried through the blood stream to the ureter rather than by the lymphatics, a route probably travelled by many so called ascending infections.

EDWARD F. HINE, M.D.

## BLADDER URETHRA AND PENIS

Young H H: The Operative Cure of Incontinence of Urine. *Ann Surg* 1908; 47: 1-11

This is a very comprehensive and instructive article dealing in detail the problem presented by the stricture of the urethra and the operative technique the author has found satisfactory. Case histories are cited and large number of illustrations are included. Young divides his cases into the following four groups:

(1) *Partial stricture of the urethra*. This is the case of incontinence of urine in the urethra and those of the perineal stricture. A rule there is that the stricture is of the nature of both the internal and the external stricture. The operations performed for this stricture are (1) the perineal urethrotomy and (2) the perineal urethrotomy and (3) the perineal urethrotomy and (4) the perineal urethrotomy. There are two cases of the stricture of the urethra (the perineal stricture) and the perineal stricture. The perineal stricture is of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture.

(2) *Complete stricture of the urethra*. This group includes those cases of the stricture of the urethra which are of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture.

(3) *Stricture of the urethra*. This group includes those cases of the stricture of the urethra which are of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture.

It was thought necessary not only to ensure the roof of the prostatic urethra but to continue this excision downward so as to include the roof of the membranous urethra. In doing this it was found helpful to make part of the excision through the

distal penile defect. After the stricture was removed from the bulbous urethra down to the external opening the roof of the urethra was effected by means of the boomerang method. First along the roof of the membranous urethra and then through the penile defect. When this was completed the urethra was then tightened at the point of the incision so that it resembled a normal urethra.

(4) *Stricture of the urethra*. This group includes those cases of the stricture of the urethra which are of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture. The perineal stricture is of the nature of both the internal and the external stricture.

Young is of the opinion that the treatment of most cases of stricture of the urethra is by the perineal urethrotomy. He is of the opinion that the perineal urethrotomy is the best method of treating the stricture of the urethra. He is of the opinion that the perineal urethrotomy is the best method of treating the stricture of the urethra.

Young H H: The Operative Treatment of Incontinence of the Urine. *Ann Surg* 1908; 47: 1-11

The author gives a detailed description of the operative treatment of incontinence of the urine. He describes the perineal urethrotomy and the perineal urethrotomy. He describes the perineal urethrotomy and the perineal urethrotomy. He describes the perineal urethrotomy and the perineal urethrotomy.

## GENITAL ORGANS

Sch. Wetz. A. H. and Cappelk. J. Streptococci in the Prostate Gland. *Ann Surg* 1908; 47: 1-11

Bacteriological study of a series of cases of prostatitis made by the authors revealed the presence of streptococci in the prostatic secretion of a large number. Their study is summarized as follows:

Streptococci found by cultural method  
65 per cent of the cases

3 Most of the cases with positive culture of streptothrix differed clinically from the others in that the urethral discharge was distinctly mucous purulent.

3 In eight of the ten cases in which clinical cure was obtained cultures were negative for streptothrix 4 weeks after the suspension of all treatment.

4 Ten to 77 per cent of all cases in which the streptothrix was demonstrated were relieved of the urethral discharge by specific cone therapy. Supplemental prostatic massage was necessary in only three.

5 Cases responded to a hygienic, astringent therapy rapidly or not at all. Of the eight cases in which both a clinical and a bacteriological cure was obtained, seven were given ten injections or less. The eighth case received fifteen injections.

6 Ten cases showed clinical, but not cultural, cure after fifteen injections.

7 Three cases showed practically no change after ten or more injections.

From F. HARRIS, M.D.

Troenkle J. L. The Pathology and Mechanism of Prostatic Hypertrophy. *J. Urol.* 9, 1918, 43.

The author summarizes the various theories regarding the pathology and mechanism of the changes occurring in prostatic hypertrophy. The subject is discussed under the following headings: (1) the mechanism of the changes in the urethra occurring in prostatic hypertrophy; (2) the effects of the bladder and (3) the changes in the upper urinary tract and their special mechanism.

The progress made in prostatic pathology leads to the conclusion that the so-called prostatic hypertrophy is really a hyperplasia of the periurethral glands. The prostate itself undergoes atrophy through compression by the growth intruding upon it or primarily as physiological senile process occurring in advanced life.

Prostatic hypertrophy cannot be considered disease. The true pathologic process develops in the secondary changes in the urinary tract caused by proliferation of the periurethral glands.

The changes in the bladder and ureters of the urethra are the result of unopposed obstructive and antagonistic forces of which the direct pressure of the intruding glands, the indirect influence of the changes in the bladder upon the urethra and the anatomical peculiarity of the latter are the most important. The part of the urethra which is directly subjected to moulding by the growth is the supra-montane portion of the prostatic urethra.

The muscular peristalsis of the urethra suffers gradual loss of elasticity. The most noticeable changes are observed in the so-called longitudinal muscle which is subject to direct pressure and distortion in the growth.

Two types of intrusion of the growth into the bladder may be distinguished: (1) the direct and

the indirect. Direct invasion occurs near the sphincter of the bladder and is associated with alterations in the symmetry of the bladder and the outline of the phallus. This is not observed in the indirect invasions, which raise the entire floor of the bladder without affecting its symmetry directly.

The pathologic middle lobe formation has nothing common with the anatomical middle lobe prostatic lobe.

The alterations which take place in the bladder are due to the antagonistic forces the quality and the degree of obstruction and the capacity of the bladder to resist the effects of obstruction. The early stages of bladder in eminent are marked by increased muscular activity. In the later stages of growing disproportion between obstruction and resistance distention and atrophy of the bladder are combined with impairment of muscular activity.

The conception of back-pressure as the primary cause of the changes occurring in the upper urinary tract is inconsistent with the anatomical and physiological peculiarities of the bladder and the ureters. Contraction of the bladder prevents rather than causes urinary reflux, and in a tonic bladder urinary reflux is still less probable.

According to Trendelenburg and Ziemann, advanced bladder distention with prostatic hypertrophy compression and narrowing of the ureters which in turn may cause obstruction of the downward flow of urine and be followed by secondary enlargement of the parts above the stricture.

The early stages of renal in eminent occurring prostatics are marked by congestion of the kidneys associated with nocturnal polyuria and are followed by gradual destruction of the kidney substance with the symptoms of azotemia and hyposthenuria.

The cystoscopic picture of an enlarged interureteral ligament extending beyond the orifices of the ureters as observed in the later course of prostatic hypertrophy is suggestive of a complication in the upper part of the urinary tract.

From F. HARRIS, M.D.

Harris, S. H. Prostatectomy: A Review of a Recent Series of 146 Cases with Five Deaths. *Med. J. Australia*, 9, 1918, 40.

The author reviews a series of 146 cases treated by prostatectomy during a 6-year period in which there were five deaths, a mortality rate of slightly less than 3.5 per cent. The deaths were due to embolism, circulatory failure, secondary hemorrhage, exhaustion and uremia respectively.

Cystotomy as performed in twenty-seven of the cases, and preliminary cystotomy in thirty. Suprapubic prostatectomy as done in all the cases. Squire's method of enucleation being used. The average age of the patients was 60 years, the oldest 86 and the youngest 49.

Asperic acid or emulsion except 33 pt. of salt solution was administered until the fourth day. Then 1 oz. of castor oil by mouth and 6 oz. of warm olive oil

by return or given by bladder irrigation of any kind was used during the first fortnight. The majority of the patients began to pass urine naturally from the eighth to the tenth day. The author urges the use of a glass tube for bladder drainage instead of rubber tube. T. J. Lusk, M.D.

Ward R. D.: Cyst of the Epididymis. *Lancet* 9: 2, 1911.

Cysts of the epididymis are not rare and may reach the size of hydroceles. They are frequently bilateral. Monod and Terrillon divide them into two groups: (1) small cysts; (2) also called globus major and (3) large cysts, so called spermatoceles which are more frequently located in the testis.

The former which are important are not uncommon in children. What is very rarely found on the inner surface of the globus major. They are vesicle and a hamon and range in size from that of a pinhead to that of a pea. Their pathogenesis is uncertain. They may arise from vestigial remnants

and result from trauma or inflammation. They are asymptomatic and require no treatment.

The larger cysts are of clinical importance. Their pathology is still uncertain. They are believed to originate between the under surface of the globe major and the upper surface of the testis, encroaching upon the epididymis. As they show communications with the spermatic ducts and contain spermatozoa, they may be due to partial dilatations of the excretory duct of the testis. They appear to be retention cysts. The usual amount of fluid contained in them is about 5 cc. but much greater quantities have been found.

These cysts are differentiated from hydroceles of the testis by greater softness, palpable localization, the position of the testis, the presence of spermatozoa in the fluid, the findings of transillumination and confirmed by tapping.

The palliative treatment consisting of tapping if recurrence develops, is pointed out.

LOUIS VERMOREL, M.D.

## SURGERY OF THE EYE AND EAR

### EYE

Brunson S. A. The Relation of Orbital Affections Due to Nasal Conditions. *Present* U J 92, 33, 34

Orbital affections due to nasal conditions are favored by deflection of the nasal septum, especially opposite the middle turbinate; abnormality in the size and position of the middle and superior turbinates, and faulty drainage and ventilation. These cause an intranasal pressure which produces chronic congestion, which is followed by hyperplasia, especially of the basement membrane and eventually blocks the posterior sinuses. Infection may then take place and cause an inflammatory process. The latter is generally exudative, rarely suppurative.

Stinging inflammation spreads by continuity of the tissues of the optic nerve and its meninges. In many cases there is a history of recent coryza or a prior influenza, and in a few the history of an old intermittent rhinitis with severe headache but without mucopurulent discharge from the nose. The object findings are conjunctivitis, choked disk, engorgement of the retina, and loss of the color field. The characteristic symptoms are those of rhinitis, uremia, or retinitis.

Local treatment may consist of shrinkage of the turbinates and the use of the vacuum, but the patient should be watched most carefully by the ophthalmologist as operation may become imperative. Surgical treatment may consist of straightening deflections of the septum, turbinectomy, thorough ventilation and sphenoid aspiration. For hyperplastic types with infection the author advocates the use of autogenous vaccines. An X-ray examination should be made to determine the presence of anatomical abnormalities.

JAMES P. FITZGERALD, M.D.

Shoemaker W. T. Some Observations on Orbital Growths. *Reports of Three Cases* *Present* U J 92, 33, 30

A college student aged 17 years had pain for six days in and around the left eye. The lid was slightly swollen, the palpebral fissure a trifle widened, the eyeball protruded, and the movement of the eyeball limited to the temporal side. The pain was increased when the eyeball was pressed backward. Vision was  $\frac{1}{2}$  but subsequently decreased to  $\frac{1}{30}$ .

Examination of the fundus showed a light blurring of the disk at the temporal side. In the next few days a definite neuritis developed and there was an area of fundus elevation about 5 diopters in excess of the general hyperopia. The overlying choroid and retina were greatly disturbed and the fundus below markedly streaked. The elevated fundus was

shadowed in transillumination and definitely outlined by perimetry. The left nasal chamber was found congested but the right was normal. There was no pus in the nose. In transillumination from the mouth both antra were black. In transillumination through the nose, the left antrum was black but the right was fairly clear. The tentative diagnosis was an unusually thick bone forming the hard palate and possibly a solid growth of the left antrum.

The treatment consisted of mercury unguent to the point of toleration followed by increasing doses of potassium iodide and the administration of arsenic with the mercury. Recovery was rapid, complete and permanent.

Points emphasized are that cases of unproved malignancy should be given thorough treatment with mercury before they are subjected to surgical interference; that mercury is valuable as an absorbent in many conditions other than syphilis; and that radical measures should not be resorted to before a sufficient amount of time has been allowed for results from other methods.

In an infant 6 months old, hemangioma originated within the orbit and presented at the inner angle of the base of the upper lid. The physical examination revealed enlargement of the thymus gland, evidences of cretinism, enlargement of the spleen, and other signs of endocrine disturbance. On the skin of the lid, directly over the soft protruding mass, was a small nevus. As the tumor increased in size and was accessible and as it was unmistakably a vascular operation was decided upon. Either was administered and the growth extirpated in the usual manner.

Sections of the tumor seemed to confirm the diagnosis of hemangioma, but there was recurrence within a few weeks and the spleen remained enlarged, suggesting strongly that the second growth was sarcoma. Opposed to this, however, was the fact that the child's general condition steadily improved.

The recurrent growth, which had extended along the entire base of the upper lid and was larger than the primary growth, was thoroughly removed. The second tumor was variously diagnosed as sarcoma, hemangioma, endothelioma, and hemangioma.

Since the second operation there has been no recurrence, and the child has remained well.

The use of radium was considered in this case, but Shoemaker regarded it as too powerful and not sufficiently controllable to introduce close to the eyeball.

In the case of a boy 7 years old the surgical removal of a fair sized encapsulated sarcoma from the orbit was followed by X-ray treatment. Six weeks after the operation active recurrence was noted. The



growth was chiefly on the floor of the orbit, all forward. Four rule sutures were introduced into the tumor and allowed to remain for three hours. Within a week practically all signs of swelling had disappeared. During the subsequent four months the skin of the lower lid softened, and the projections decreased. The process then again became active there, as never again, in the duration of the condition, a fourteen month, and the tumor again lasted about three months.

107 P. H. G. M. M. M.

Clifford, R. R. Ocular Spontaneousness and Depth  
19 4 440

Gordon reports the case of Boy A, 10 old boy had persistent frontal of the lachrymal sac connected with infected ethmoid cells. Cultures of swabs showed sporotricha and these organisms were isolated in pure culture from an aspirated bit. The patient is on large doses of antibiotics. The end result is not reported but treatment is made that the lesion healed.

The author reviews number of similar work has been reported in the literature.

Tommy (1) tu. 441

Neuro II. Ocular Sarcoma with Wide Extension  
I retract the Brain and spinal Cord As I  
Date 9 / 491 317

Penetration of the gel by epithelial sarcoma cells and instances in which (b) occurs, showing extensive damage to the form of the epithelial particularly unusual. A case of the latter type is reported in the article with general review of the literature of the subject.

The thoracic patient is a man 55 yrs of age who complains in 10 of slight irritation beneath the upper lid of the left eye. Though the bump is there and in sun, there is no disturbance of vision as noted for 3 months. In March of 1936 there was marked lifting of the subconjunctiva at times with overlapping of the corneal margin all round and getting proprio. The conjunctiva covering the lifting different tense and glistening and out need many blood vessels run out toward the cornea. The growth itself was firm throughout. The other was hard and small brownish red patch. It was 1 mm. in size. The lower part of the anterior chamber was taken to be in place. A bit of the cornea was also noted.

1. Infection performed Examination of the globe revealed disseminated retinomatous strict re-infection practically 1/2 of the intraocular tissues. Three months later it became necessary to excise lateral the orbit because of recurrent growth but healing as prompt as at the end of another month there had been no recurrence.

The author draws the following conclusions as to the treatment:

If the growth is freely movable with the conjunctiva over the underlying structures and measures 1 cm or less, local removal is indicated.

If the growth is the least abundant, the gland on considerable margin of conjunctiva should be removed and radium applied.

g. If the growth is large and there is a history of rapid extension, the orbit should be extirpated.

1979 P. 1000-1002

Woods, I. C. and Knapp, A. The Therapeutic Use of Uveal Pigment in Sympathetic Ophthalmia and Iridocyclitis. *Br J Ophth* 6: 150

The authors report the case of an 8-year-old boy, who had a unilateral congenital akinesia and paralysis of the arm, the result of gonorrheal conjunctivitis at three months of age. A visual light perception and tension plus a unknown dose of the defect in the other occluded the prolonged time removed and the corneal wound covered with a conjunctival flap. At risk later the patient returned with myopathic unit loss. At risk later the had increased to a normal level. The injured eye is then removed.

The post pil serum section is a preliminary report. It indicates a promising effect of the adjunctal application of pilocarpine to induce sweating and thereby the skin pores had no effect upon the condition. A course of non specific protein therapy as then begun but is then continued to grow some the treatment change to doses of 100 mg. daily. There also were slight effect.

Two months after the beginning of the insect  
treatment the percentage of total weight  
loss (radial) the eye became better and  
although there was about 25% loss one month  
later the general tendency toward improve-  
ment, the eye is still becoming free from  
inflammation and the eye is now 100%.

The tech spec of what entering the program is described below. Times D were MD

L. C. M. Focal infection in the Tonsil Causing a Tuberculous Ophthalmia. J. W. M. M.  
1911. 528

The above report the use of girl and rats  
have condition diagnosed tuberculosis  
ketatis diagnosed confirmed by a rat analysis.

The job was not too difficult, even though she  
wasn't, although the first all operated on  
the age of 4, and for cervical adenitis and  
the age of 4 had tonsillectomy for repeated  
attacks of tonsillitis and several other operations for  
the removal of tonsils of tonsillitis (some of them  
had become so poor that she was able to recog-  
nize another person in the room).

Jack enumerated the local and systemic features of the disease. Upon pathologic examination the showed bronchial inflammation, hyperplasia, and great numbers of solitary cells clustered around the crypts. The majority of the latter are epithelioid & histiocytes, but some were larger and contained foamy vacuoles and granules.

Following the operation, vision in the right eye improved to 20/50 and that in the left became normal.

The author has been unable to find the report of a similar case in the literature.

JAMES P. FITZGERALD, M.D.

Verhoeff, F. H. and Friedenwald, J. S. Injury to the Cornea and Conjunctiva Due to Fish Bile. *Am J Ophth* 9: 837

As a result of experimental testings of the effect of bile on rabbits it was thought that the corneal opacity originally attributed to fish bile in the case reported was probably due to the use of lead acetate as an eye wash. Verhoeff and Friedenwald therefore warn ophthalmologists against the use of lead acetate in corneal lesions.

THOMAS D. ALLEN, M.D.

Johnson, G. L. A New Method of Removing the Lens in Its Capsule. *Arch Ophth* 9: 448

The author uses two instruments, a shovel spoon and an extraction spoon which are shown in cuts. He inserts one spoon close to the pupillary edge of the top and while making pressure with the other spoon on the lower part of the cornea breaks the zonular fibers above and presses the lens out onto the first spoon. He is not concerned by the loss of small amount of vitreous provided he does not uncover the ora serrata. THOMAS D. ALLEN, M.D.

Blake, E. M. Bilateral Detachment of the Retina in Nephritis of Pregnancy. Reattachment of Retina. *Arch Ophth* 9: 456

In the case reported final vision was 20/50 in the right eye and 20/100 plus in the left and the visual fields were practically normal.

Blake reviews the literature briefly and concludes that ophthalmologic examinations should be made more frequently in cases of pregnancy.

THOMAS D. ALLEN, M.D.

## EAR

Hodges, P. C. A New Method of Simultaneous Stereoscopic Observation of Both Mastoids. *Am J Roentgenol* 9: 153

The author makes stereoscopic exposures of both mastoids on 5 by 7 in. films and then mounts these on two pieces of 5 by 7 in. celluloid in such a manner that those of one side may be seen stereoscopically above those of the other side. He has found his method simpler than that described by Hill and Thomas in 1911 and equally efficient.

ABRAHAM HARTMAN, M.D.

Gottlieb, M. J. The Indications for the Radical Mastoid Operation. *Am J Surg* 922 XVIII, 366

A foul aurial discharge, exposed bone in the middle ear and a decided decrease in hearing singly or altogether do not constitute a definite indication for the radical mastoid operation.

A chronic fetid aurial discharge accompanied by headache or vertigo originating in the ear indicates the operation even though hearing is good.

The presence of large obstructing polyp, cholesteatomata or fistulous tracts draining through the mastoid cortex or the posterior bony wall of the external auditory canal constitutes definite indication for operative intervention.

An acute exacerbation of obstruction to drainage in case of chronic mastoiditis warrants radical treatment.

The development of facial paralysis as a complication of chronic otitis media is a definite indication for the radical mastoid operation.

Cases illustrating the occurrence of fistulous tracts and signs of obstruction to drainage in the middle ear are presented in detail.

The radical operation should never be done unless a functional test of the labyrinth has ruled out the presence of latent chronic labyrinthitis.

MATTHEW H. CORLETT, M.D.



The diagnostic and prognostic value of some associated symptoms in trigeminal neuralgia. E. I. SANE. *Sego med.* 9, lxix, 437.

Plastic surgery of the head and neck. F. RIMOV. *Canadian M. Ass. J.* 9, xx, 797.

The delayed pedicle flap—plastic surgery of the face and neck. G. B. NEW. *Minnesota Med.* 9, 72, [165].

Bilateral body ankylosis of the temporomandibular joint of bovine origin. A. MALLARA. *Policlin. Rome*, 9, 2, xxx, sec. clin. 59.

The anatomy and physiology of the temporomandibular joint. P. DORRILL. *Policlin. Rome* 9, xxx, sec. anat. 557.

Universal jaw dilator as an adjunct in the treatment of mandibular ankylosis. R. H. IVEY. *Ann. Surg.* 9, lxxv, 647.

Emergency apparatus for fractures of the jaw. A. CANALE. *Semana med.* 9, 2, xxx, 89.

Carcinoma of the tongue with metastases in the cervical glands under treatment with radium and the X-ray. W. E. LEE. *Ann. Surg.* 92, lxxv, 651.

## Neck

The prevention of simple goiter in man. O. P. KERRALL. *Nation's Health*, 92, iv, 656.

The effects of hypothyroidism. H. H. HETRO. *Illness M. J.* 9, 2, xii, 337.

The radiation treatment of hyperthyroidism and the basal metabolism test. H. SWANBERG. *J. Iowa Stat. M. Soc.* 92, xx, 443.

The history and symptomatology of nodothyroidism (Kascher) chronic nodular goiter cachexia (Roeder) constitutional nodism (Rilliet). L. FALKENBERG. *Muenchen med. Wchnsch.* 92, lxx, 377.

Esophagoblastic goiter. C. F. NAMAU. *Ann. Surg.* 1922, lxxv, 649.

Clinical experiences in 840 operations for goiter with special consideration of recurrent goiters and operations for recurrence. J. DUBS. *Schweiz. med. Wchnsch.* 92, lx, 90, 93. [165]

Recurrence of goiter. H. KLOSE and A. HILLWITZ. *Klin. Wchnsch.* 9, 2, 885. [166]

Brachial fistula. B. LIPSHUTZ. *Ann. Surg.* 19, lxxv, 645.

The treatment and prognosis of carcinoma of the larynx. W. OXALA. *Ann. Otol. Rhinol. & Laryngol.* 9, xxx, 60. [166]

The treatment of cancer of the larynx by surgery and by radiation (X-ray and radium). A. G. TAPPS. *Arch. de med. chir. y especial.* 9, ix, 577.

Total laryngectomy according to the Moore-Portmann and Dumas methods. G. TERTIO. *Rassegna internaz. di chir. terap.* 92, ix, 358.

The technique of total laryngectomy. R. DORRY. *Arch. de med. chir. y especial.* 9, ix, 600.

## SURGERY OF THE CHEST

### Chest Wall and Breast

Innoculation of the thorax. H. O. ALFVON. *J. Am. M. Ass.* 92, lxxx, 840.

The etiology of empysemic pleural effusion. N. E. CLARKE. *J. Am. M. Ass.* 92, lxxx, 59.

Pleural with effusion as a complication of artificial pneumothorax. H. DENT. *Klin. Wchnsch.* 9, 2, 647.

Parasternal pleural thoracotomy. J. C. PRODA. *Rev. de med. y chir. de la Habana*, 9, xviii, 760.

A study of the clinical and radiological findings in pleurisy. M. B. TITCHENOROV and P. F. TITCHENOROV. *J. Missouri State M. Ass.* 92, xix, 465.

Chronic empyema in the United States army. W. L. KELLER. *Ann. Surg.* 92, lxxv, 569, 700.

The present-day treatment of empyema. V. H. CAL. *Klin. Wchnsch.* 92, lxxv, 98.

The treatment of pleural empyema. W. KASIM. *Muenchen med. Wchnsch.* 9, 2, lxxx, 278.

Pleurobronchial and pleurocutaneous fistula. J. A. SANCHEZ. *Ohio State M. J.* 9, xviii, 739.

Cystic disease of the breast. J. E. THOMSON. *Texas State M. J.* 9, 2, xvii, 344.

The clinical picture of the diffuse type of chronic cystic mastitis (the so-called breast). J. C. BLOOMENFELD. *South M. J.* 92, xv, 907.

Bleeding breasts with few cancer statistics from the Druggists Hospital. J. K. HALD. *North. Mag. & Laryngol.* 1922, lxxxv, 59. [166]

Cancer of the breast: the combined treatment of surgery, radium, and the X-ray. J. T. MOORE. *Texas State M. J.* 1922, xviii, 355.

Fifty-one cases of postoperative recurrence of breast cancer. I. L. ROUS. *Blutau. Rev. internaz. de med. et chir.* 92, lxxxv, 7.

The treatment of recurrent inoperable carcinoma of the breast by radium and the roentgen ray. B. J. LEE. *J. Am. M. Ass.* 92, lxxx, 574. [167]

Does radiation enhance postoperative recurrence of carcinoma of the breast? M. J. SETTERFIELD. *J. Radiol.* 9, ix, 476. [167]

### Trachea and Lungs

The intratracheal injection of oils for diagnostic and therapeutic purposes. H. J. CONNER and H. FRIED. *J. Am. M. Ass.* 92, lxxx, 739.

Tracheobronchitis complicated by an effusion of blood. G. SERRA. *Ann. Ital. di chir.* 92, i, 66. [168]

Intratracheal stricture. E. WERTER. *Muenchen med. Wchnsch.* 9, lxxx, 38.

A case of papillomata of the trachea. J. DUNDAS. *Grand Med. Press* 9, cxiv, 409.

Foreign bodies in the upper air and food passages. H. B. GRAM. *California State M. J.* 9, xi, 390.

Foreign bodies in the bronchioles and bronchopneumonia. C. F. BOWEN. *Am. J. Roentgenol.* 92, i, 705.

The removal of paper fastener by direct peroral bronchoscopy after impaction for 1 entry one month in the left bronchus. H. TILLER. *Brit. M. J.* 9, ii, 973.

The X-ray in the diagnosis of pulmonary tuberculosis. J. D. MACRAE. *South M. J.* 92, xv, 870.

Surgical intervention in pulmonary tuberculosis. G. SATO and J. M. ALLARD. *Semana med.* 19, 2, xxx, 63.

Artificial pneumothorax complicated by hydro-pneumothorax and pleurisy with effusion on the untreated side: report of 4 cases. L. S. PIERCE. *J. Am. M. Ass.* 9, lxxx, 607.

A new apparatus for thoracostomy and for pneumothorax. F. ROSEN. *Policlin. Rome*, 92, xxx, sec. anat. 59.

The indications for operation in lung abscess. M. RAYNER. *Spatul.* 19, 2, xii, 96.

Lung abscess treated by bronchoscopy. C. N. GILBER. *Am. Med.* 92, xviii, 64.







Pitfalls in diagnosis of chronic diseases of upper abdomen  
 J B DEVEREUX Internat J Surg 9 xxiv 383  
 Pharyngeal abdominal tumors N FLEMMING Med  
 Press 9 2, 427

The peritoneal fold (Jackson membrane) MULLER  
 and FORTNER. Rev de chir. Par 1922 xli, 5  
 Hemoperitoneum with bluish discolored umbilicus  
 H M SPOCKENBERG J Am M Ass 922, 1922, 84

## SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Nerves,  
 Tendons, Etc

Injuries of the bones and joints in the roentgen picture  
 K BURMANNA. Wien med Wochenschr 9 lxvii 505  
 Osteosarcoma E P C WATTS Arch Int Med 9  
 11 620  
 Pseudotuberculosis and osteosarcoma S P STORKE  
 Polster. Rome 92 xxviii ser chir 505  
 Osteosarcoma (antra) proleptica Waprosarcoma  
 Wern. Schoenberg disease G G D. Arch Surg  
 922 440

Orthopaedic report of case, with roentgenograms,  
 of eleven different fractures in the same patient D M  
 GUYTON Arch Surg 9 454

Rickets is common and pathogenic G L FARR  
 Lancet Med Press 92 470

The calcium and phosphorus concentration in the serum  
 of infants with mild rickets or condition simulating mild  
 rickets F F THOMAS Am J Dis Child 922, xxv 38

The pelvis of rickets children as the precursors of the  
 rickets like pelvis of women H T ASHLEY Brit M J  
 922 11, 905

Ultraviolet radiation in rickets. PACCO. Am J Clin  
 Med 922, xxv, 777

Decalcification of teeth and bones and regeneration of  
 bone through diet P R HOWE J Am M Ass 9  
 1192, 365

Femoral diet and its relation to the structure of bone  
 P G SAMUEL J Am M Ass 922, 1192, 503

Epiphyseal and other bone diseases in adolescence  
 SCHWAB. Jahrbuch d. deutsch Naturf. Aerzte, Leipzig  
 922

A case of Paget's disease C DOVOVAY Rev Assoc  
 med argent 922, xxv, 458

Paget's disease of the bones (osteitis deformans) H I  
 GUTTENBERG Med Times 9 2, 470

A case of Paget's disease J Nev Sel. Am Fac de  
 med. Univ de Montevideo 9 2, 78 335

Osteitis deformans G HUBNER. Allg med Zentral  
 Zeitg 92 xxi 305

A contribution to the pathologic anatomy of osteitis  
 deformans. G. REICHERT. Zentralbl f  
 Chir 9 2, xli, 447

A peculiar form of tumor like osteomyelitis E MILL  
 Chron. Med Klin 922, xviii 805 [1973]

Bone repair following injury and infection F W  
 BLANCHARD Arch Surg 9 646

Bone atrophy clinical study of the changes in bone  
 which result from non use N ALLISON and B BROOKS  
 Arch Surg 9 490

Osteoarthritis W A GARDNER. Canadian M Ass J  
 9 2, ix, 808

Slow movement of the joints in the treatment of chronic  
 infectious joint diseases H BARTER. Muenchen med  
 Wochenschr 9 liii, 143

Spasms of the rhomboides minor muscle J P REICHL  
 L. Ann Surg 9 2, lxxvi, 64

The treatment of spastic contractions of the lower  
 extremities by resection of the posterior spinal roots A  
 W. SARRA. Verhandl d. Rom. Chir. Protop. Ges.  
 Freiburg, 92

The re-education of muscles P KOURNIT Arch  
 Radiol & Electrotherapy 9 2, xxvii, 80

Report of an unusual foreign body in the arm C F  
 BAKER Am J Roentgenol 92 11, 727 [1973]

Another case of double sinus and absence of the radius  
 C MAU. Ztschr f orthop Chir 9 2, xli, 355

A unusual relation of the styloid process of the radius  
 and the ulna G T TYLES, J Boston M & S J  
 922vii, 640

Radium therapy combined with bone grafting in case  
 of sarcoma of the radius L MAYER. Bruxelles med  
 9 11, 4

Polydactylia syndactylia thumb has three plus  
 fingers A DUALLETY Arch franco belges de chir 9  
 xiv 83

Report of case of congenital polysyndactylia L  
 VERDELLET and J CH. A. VAS. Arch franco-belges de  
 chir 9 2, xvi 934

A preliminary note on the treatment of contracted  
 fingers and of some cases of contracture by mild high fre-  
 quency currents and violet rays C E SMITH Arch  
 Radiol & Electrotherapy 9 2, xxvi, 77

Osteo-articular protrusion of the acromioclavicular A L  
 HERRMANN Arch Surg 9 2, 60

Predisposition to the so-called cornu varii of adolescence  
 HANS. Jahrbuch d. deutsch Naturf. Aerzte, Leipzig  
 9

New tuberculous arthritis of the hip A BROGA. Presse  
 med Par 922, xxi, 64

Osteochondroma of the upper epiphysis of the femur of  
 cornu pium RIBALDINO Med Rera 9 2, xvi, 26

Suppurating arthritis of the knee C L FARR. Ann  
 Surg 9 1192, 67

Osteomyelitis of the head of the tibia treated by an  
 attached skin-covered flap H H M LYLE. Ann Su 4  
 9 2, lxxvi, 633

## Fractures and Dislocations

Fractures A ASHALL. Med J Australia, 11, 53

An experimental study of the healing of fractures L  
 W. EL. Arch Surg 922, 327

The principles of fracture treatment W VA. HOO  
 Am J Surg 92 xxxvi, 227

An emergency universal splint for fractured long bones  
 H C MARLAND J Am M Ass 922, lxxv, 1890

The treatment of fractured clavicles W L. BELL  
 Ann Surg 922, lxxvi, 595

Fractured clavicles T E. RICHARDS J Am M Ass  
 9 2, lxxvi, 830

Spontaneous dislocation of the wrist H BUNCKENBURY  
 Beitr. klin Chir 922, cxxvi, 74

Rare wrist injuries E DELAUNOY Arch franco belges  
 de chir 9 2, xiv 846

The trans-olecranon route for the reduction of old  
 fractures of the elbow BLANCHARD. Presse med Par  
 9 2, xxi, 768 [1976]

Compromised fractures of the lower end of the radius  
 J H STEVENS. Ann Surg 922, lxxvi, 390

Carpal and metacarpal fractures during the year 9 9  
 and 920 in Swiss Accident Insurance Arch f orthop  
 Unfall Chir 9 22, 445



Isolated pelvic fractures simultaneously produced in individuals by common accident. L. R. MALLORY. *Am J Surg* 1922, xxvii, 78.

The treatment of congenital dislocation of the hip. HAAVERES. *Jahrbuchentf d deutsch Naturf Aerzte*, Leipzig, 922.

The operative reduction of old irreducible dislocation of the hip. L. STRUCKER. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

Incomplete epiphyseal fractures at the hip. R. WINTER. *Ann Surg* 922, lxxv, 622.

The diagnosis and treatment of incomplete epiphyseal fractures of the hip. R. WINTER. *Ann Surg* 922, lxxv, 626.

Necrosis of the proximal fragment in fracture of the neck of the femur and its importance with regard to the hip joint. G. ALEXANDER. *Arch f Klin Chir* 922, cxv, 3.

The treatment of fracture of the neck of the femur. ROBERT and BOSCH. *Riforma med* 922, xxviii, 24.

Immediate operation for fracture of the neck of the femur. A. O. WILKINSON. *Ann Surg* 1922, lxxv, 63.

The operative treatment of subcapital fractures of the neck of the femur. R. BO. *Arch f Klin Chir* 922, cxv, 394.

Subtrochanteric fractures of the femur. oblique osteotomy ideal combination. G. G. DUNSTON. *Rev de med y chir de H. Habant*, 922, xxv, 756.

The treatment of fractures of the shaft of the femur. T. A. DUNN. *J Med Soc N Jersey* 1922, xix, 35.

The results of treatment of fractured femurs in children. An experimental reference to Bryant's overhead traction. W. H. COLE. *Arch Surg* 1922, lxxv, 70.

Fractures of the patella. L. MACIAS DE TORRES. *Prog de la clin*, Madrid, 922, cxv, 35.

Fracture of the internal condyle and disjunctive rhizoid of the right knee in secondary bone reparation of

the femoral artery, and early mobilization. G. ZOGRAFOU. *Bol y trab Soc de chir de Buenos Aires* 1922, vi, 263.

Fractures of the leg. I. COHEN. *New Orleans M J* 922, lxxv, 24.

The Delebo. sliding plaster for the treatment of delayed union in fractures of both bones of the leg. L. C. MONTGOMERY. *Arch Surg* 922, cxv, 425.

Fracture of the iliac spine: an experimental study. F. E. MASONNET. *Arch Surg* 1922, 90.

Lapping fracture of the lower tibia: end of the ilio. N. F. LOUWAGHE and A. R. MEYER. *Arch Surg* 922, 676.

Injuries to the crucial ligaments and avulsion of the ilial spine. C. F. FARVER. *Boston M J* 922, cxviii, 763.

### Surgery of the Bones, Joints, Muscles, Tendons, Etc.

The use of large Reverdin grafts in the healing of chronic overexposed ulcers. J. R. REED. *Bull Johns Hopkins Ho p* 1922, 9, xxviii, 346.

Paralysis of the shoulder girdle. P. SERRAVALLO. *Arch franco-belges de chir* 922, lxxv, 951.

Arthroplasty of the elbow. W. C. CANNON. *Ann Surg* 922, lxxv, 65.

A prosthesis for the thumb. S. ODELL. *Acta chirurg Scand* 922, 1.

Wounds of the knee. H. WILSON. *Proc med f* 1922, 9, cxv, 60.

A new approach to the semilunar cartilage. P. W. ROBERTS. *J Am M Soc* 1922, lxxv, 1768.

Amputation of the foot by Maigne's method. P. Y. C. ROBERTS. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

A fat transplant for painful stump. H. R. O'NEIL. *Ann Surg* 922, lxxv, 630.

## SURGERY OF THE SPINAL COLUMN AND CORD

Spinal flexibility. L. H. BRADFORD. *Boston M J* 922, cxviii, 745.

A case of backward fixation of the seventh cervical vertebra with isolated compression of nerve roots. J. CARR. *Arch franco-belges de chir* 922, lxxv, 915.

Lateral subluxation of the third cervical vertebra on the fourth. GORTCH. *Arch franco-belges de chir* 922, lxxv, 919.

Traumatic spondylitis. T. H. ORFELD. *Proc Roy Soc Med Lond* 922, xxi, Sect Orthop.

School children and spinal curves. E. H. BRADFORD. *Boston M J* 922, cxviii, 76.

The roentgen ray in the diagnosis of scoliosis. I. W. LANE. *Am J Roentgenol* 922, 2, 73.

The principle of actin correction in the treatment of scoliosis. SCHROEDER. *Jahrbuchentf d deutsch Naturf Aerzte*, Leipzig, 922.

The treatment of scoliosis. W. J. BRADY. *Arch Radiol & Electrotherapy* 1922, cxviii, 87.

The treatment of scoliosis and spondylitis with the Quersag method. BERNHARD and POKOR. *Jahrbuchentf d deutsch Naturf Aerzte*, Leipzig, 922.

The operative treatment of severe scoliosis. R. WINTER. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 9.

Observations on the correct and operative treatment of structural scoliosis. A. WINTER. *Arch Surg* 922, 678.

The operative treatment of scoliosis. S. KERNBERG. *Arch Surg* 1922, 93.

The interpretation of roentgenograms of Pott disease. PARR. *Bol y trab Soc de chir de Buenos Aires* 1922, vi, 269.

Operation as part of the conservative treatment of Pott disease. W. I. C. WINTER. *Fractures* 922, cxv, 34.

One hundred and eighteen cases of tuberculous of the spine treated by the Albee operation. P. G. KOEHL. *Verhandl d Russ Chir Pirogoff Ges*, Petrograd, 922.

The value of the Albee operation in tuberculous spondylitis. H. GORTCH. *Deutsche med Wochenschr* 1922, cxv, 664.

The Hibbs operation for immobilization of the spine. S. WINTER. *Verh Med f Leyden* 922, lxxviii, 677.

Compression fractures of the spine. case report. H. H. HILCO. *Bracty M J* 922, cxv, 776.

A case of fracture fracture of the cervical spine. I. A. ROBERTS. *Arch franco-belges de chir* 922, lxxv, 913.

The causative pathology and treatment of spinal hump. A. H. HILCO. *Deutsche med Wochenschr* 1922, lxxv, 19.

Radiological contribution to diagnosis of spinal osteoarthritis in cases having an unrecognized primary focus. T. SCHMIDT. *M J Med Rec* 922, cxv, 944.

An analysis of fourteen conservative cases of spinal cord lesions. C. H. FARVER and W. C. CANNON. *Arch Surg* 1922, 677.

The mechanical effect of tumors of the spinal cord their influence on the symptomatology and diagnosis C A Elsasser and B Strooker Arch Neurol & Psychiat [1979] 112: 781, 50

Spinal cord disease, report of cases J J MOORE  
Kentucky M J 9 2, 24, 893  
Fracture of prevertebral abscess F SCHMID MOORE  
Chen med Wchschr 9 1899, 779

## SURGERY OF THE NERVOUS SYSTEM

A case of malignant gangliosarcoma J Ben  
Nestr path Anat aff Path 9 2, lrv, 203  
Rapidly evolving cervical glioma consisting acut  
melan A Lrvast Polchto Rome 9 44 prst  
-68

The employment of electrical methods in the diagnosis and prognosis of paralysis due to lesions of peripheral nerves. G. BOURGEOIS Arch Radiol & Electrotherapy, 1922, VII, 6. (186)

Comparison of the median nerve in fractures of the  
 fist A N 305 An fac de med Univ de Mont  
 iden 0 305  
 Structure of peripheral nerves J S B STORRARD Brit  
 J Surg 9 3 6 (181)  
 The physiological effect of excision of the per  
 uteral sympathetic nerve plexus per uteral sympath  
 tomy L BERNARD and O STUHL Klin Wochenschr  
 03 14

## MISCELLANEOUS

### Clinical Entities—General Physiological Conditions

4 case of calcium deposits in the skin. *W. Pomeroy*  
 November 24 J. 9 38  
 Gouty gangrene as complication of war wounds.  
 Factura and L. Utrero. *Prog de la clin Madrid*  
 23 1938 8

Three cases of gangrene of the foot     4 21/10/1914  
bottle 21     02 17 06

A review of our knowledge of the functions and interrelations of the endocrine glands. J. A. I. GART and T. J. R. Am. J. N. bc. 022 clm. 646

The relation of the endocrine glands to the genital organs

Radiation in the treatment of leukaemia M B Box  
Int Chin Med 92 55

Radiation in the treatment of myelogenous leukemia  
HIVENS and L. J. MURPHY. New Orleans M & S J  
63 303 347

The study of ectomycorrhizas in the Argentine Republic  
R. WERNICKER Semana 1962 p. 100-103

The prophylaxis of hydatidosis M V CARROLL et al

The unity or duality of the tectal rhinoceros 5 1  
PARODI Scrinia ined 0 2, XIII 733

The general pathologic anatomy of the actinococcus  
J LAMMAM Semana med pt XLII, 758

Hydrated carbonates of the north R. G. CARLSON Section  
 vol. 9, 1911, 4

C. L. GARCIA *Scanned with* *gs* *xxv* 24

Operative methods in hydroponics O Connell  
Veronica and 972 rue 753

Hy dated cysts operated upon during the years 99-02

Case cyst J F FROSTAD J LARSEN 9

The inheritability of spontaneous cancer is more a  
its application to cancer in man. M. S. L. J. Radio

The fight against cancer A D CA ALCA TE Are

Superficial malignancy L. H. SARVER Med Henr  
3 2-36 3 3

Epithelioma. L. B. GREEN. Med Herald, 9 2, 21, 1  
The recognition of uterine carcinoma

Die recognition of regional crumpled structures  
the main FRANK Jahrbuch der deutsch Naturf  
Academy Leipzig.

Delay in the treatment of cancer C E FARR Am J  
M Sc 1923, July 71

Regarding the treatment of cancer in Europe S W  
S Mrs Homoeop Recorder 9 March, 496

How far can the cancer death rate be decreased by educating the profession and the public? F. J. T. 1908  
Med Herald 9, 2b, 120

**Blood**

A rapid method of blood analysis R WILKS N York  
M J & Med Rec 92 1911 516

The chemical interpretation of the findings in blood chemistry Z L BOLIN, Maj Surgeon, 9 14, 127

Blood destruction during exercise blood changes occurring in the course of a single day of exercise G O BROWN

The gasochemical study of the blood and its theoretical

and practical interpretation R D SIMMONS Bul  
Porto Rico M Am 922, 271, 79

The significance of the blood picture in acute inflammatory suppurative diseases. *Lazarskiowa*. Deutsche Zeitsch.

The number of red cells in normal blood and the

Acta med Scand, 96, h. 42, 33

The influence of the blood pressure upon the number of erythrocytes. *L. LANGE* *Primo vid.*, Par. 0, VII, 974

A chemical lecture on diseases of the blood H Z Garri  
Ann Clin Med. 9 2, 3

Intra vitam bone marrow puncture in pernicious anemia. E. H. CALVERT and L. M. MORRIS, California

The effect of the administration of hypertensive salt solu-

tion on the blood volume and certain related blood constituents. A. L. BARON, W. MASOV and B. P. JONES

The standardization of haemoglobinometers and its use

PETRISSON REACTOR. P. N. P. VON. Med Press, p. 2, July 450

General aspects of the early diagnosis of petriosis. T. L. SELLERS. Ann Clin Med 1922, 4, 57

Neurological aspects of the early diagnosis of petriosis. W. W. WOLFE. Ann Clin Med 1922, 4, 90

Downs' grouping of human blood with respect to leucocytes apply also to malarial plasmodia? S. FISHER. Acta med Scand 1922, 170, 45

Blood grouping. R. A. KILBURN. Trans Med & Hosp Rev 1922, 112, 4

Observations on effect of sodium citrate on the blood. R. M. MILLER, W. S. HARTMAN, and G. U. CASEY. J Am Med Ass 19 2, 1122, 1678

### Blood and Lymph Vessels

The formation of varices. G. LOTZINGER. Zentralbl f Chir 1922, 112, 778

Arterial and arteriovenous aneurysms. Dr. GASTRO. Referees med 92, 1122, 1123

Arteriovenous aneurysms of the extremities. A. BOOBY and A. ZENO. Rev med d Roubo, 1922, 20, 315

The etiology, pathology, anatomy, physiology and surgical treatment of true aneurysms. L. GASTRO. Ann ital di chir 1922, 4, 922 (1922)

Embolism of the brachial artery complicating acute appendicitis. Case report. P. W. ANDERSON. Am J Surg 1922, 170, 170

A case of aortic insufficiency due to trauma. A. A. J. MAYER and A. ROSENBERG. Scand med 1922, 112, 908

Changes in the tone of the muscle of the heart and vessels. F. PAL. Arch de med chir y exper 1922, 4, 308

Acute obstruction of the superior vena cava. D. WITTE. Ann Surg 1922, 112, 666

Cannula wounds of the femoral artery. C. P. MILLER. Ann Surg 1922, 112, 65

Traumatic rupture of the femoral artery with hematoma. W. C. F. WITTE and H. E. ZIEGLER. Wisconsin M J 1922, 112, 8

Traumatic arteriovenous aneurysms of the femoral vessels. A. N. SACCO. Rev Assoc med Argent 1922, 112, 485

The development and progress of vascular surgery. H. F. O. HARRIS. Engin d Chir Orthop 1922, 112, 57

A new method for the treatment of thrombo-embolic obstructions. S. SCHWARTZ. J Am M Ass 1922, 112, 1123

Surgical Diagnosis, Pathology and Therapeutics

Endocrinology as a key to the solution of major medical problems. C. E. M. SJOBERG. Am J M Sc 1922, 112, 1123

Mental symptoms in physical disease. M. CHART. Brit M J 1922, 2, 84

The significance of routine examination of the excretory W. L. BENDIS. Ann Clin Med 1922, 4, 300

Extirpation of the adrenal in epilepsy. O. M. CARRI. Deutsche Zeitsch f Chir 1922, 112, 344

The technique of the basal metabolic rate determination in psychoneurotic patients. B. S. LEVINE. J Lab & Clin Med 1922, 112, 73

Some recent advances in chemistry as aids to the clinician. H. C. BRADLEY. Illinois M J 1922, 112, 358

The Wassermann reaction. A. H. S. VON. Ann Clin Med 1922, 4, 8

The Wassermann reaction in non-syphilitic patients. C. J. BORDMAN. Ohio State M J 1922, 112, 748

The interpretation of the Wassermann reaction. R. W. DICK. Arch Int Med 1922, 112, 112

Pain its causation and relief. H. H. MILLER. Med Press, 1922, July 430

Beclache and referred pain. E. F. CYR. Arch Radiol & Electrophys 1922, 112, 83

Beclache and referred pain. I. GREGORY. Arch Radiol & Electrophys 1922, 112, 85

Electrotherapy in surgical tuberculosis. R. L. HURN. Canadian M Ass J 1922, 112, 709

Merits of intraperitoneal injections in infants. T. D. McLEOD. Canadian M Ass J 1922, 112, 780

### Röntgenology and Radium Therapy

The present status of radiology. H. ROBERTSON. Lancet 1922, 112, 112

Recent developments in radiotherapy. R. F. BELLER. J Lancet, 1922, 112, 112

The röntgen ray laboratory of the University Hospital. Philadelphia. E. P. FRIEDMAN and W. R. JAMESON. Am J Roentgenol 1922, 112, 735

A new safety device. H. W. VAN ALLEN. Am J Roentgenol 1922, 112, 745

The Van Z. Albertsberg type of stereoscope. S. W. DONALDSON and E. P. VERNAL. Am J Roentgenol 1922, 112, 74

The practical design of X-rays. A. BARKER. J Radiol 1922, 112, 478

Dosage tables for roentgen therapy. G. HOLLANDER. Leipzig Deutsche, 1922, 112, 112

Fundamental principles of radiation therapy with chemical results possible. A. I. TRILL. Nebraska State M J 1922, 112, 112

Measurements and design of the waves in deep radiotherapy. R. C. BARKER. Illinois med 1922, 112, 112

Treatment after irradiation with the roentgen ray. J. A. NARA. J Am M Ass 1922, 112, 112

Three new devices for the roentgen ray treatment of rickets and forms of the scalp. G. M. MANN and G. C. ANDERSON. Am J Roentgenol 1922, 112, 746

The roentgen treatment of carcinoma of the skin. G. MANN. Archiv med Wochenschr 1922, 112, 70

The treatment of skin cancer by X-rays, radium and electrocoagulation. G. L. FRANKLIN. N York M J & Med Rec 1922, 112, 112

Röntgen epidermatitis cured by diathermy. H. ROBERTSON. Presse med Par 1922, 112, 112

Tuberculosis and carcinoma (widespread carcinoma). E. MANN. Zentralbl f Chir 1922, 112, 112

Report of three unusual cases. T. L. GREGORY, A. C. CHRISTIE, and E. A. MANN. Am J Roentgenol 1922, 112, 749

The alkali reserve in roentgen ray sickness. R. GREGORY. Arch Int Med 1922, 112, 750

The above of the X-ray in damage to the skin. F. R. COMPTON. J Internat J Surg 1922, 112, 409

### Tooth and Oral Surgery

The function of anesthesia and surgery in industry. E. F. KIRBY. Internat J Surg 1922, 112, 40

Industrial dermatitis at the Massachusetts General Hospital. C. G. LACE. Arch Dermat & Syph 1922, 112, 112

The acute painful back among industrial employees. R. R. CON. J Am M Ass 1922, 112, 112

Accidents (the industrial) J G SEIDER L. KASINSKY  
N J 92, 22, 733

Battery burns report of three cases H S GRADY  
J Am M Ass 92, 1022, 89

The treatment of industrial injuries G BOSCH ARZ  
Scienze med 9, 22, 3

Some phases of industrial surgery J B CARNEY  
Internat J Surg 9, 22, 4

Fracture surgery and compensation A W JOE  
J Lancet 9, 2, 22, 329

### Hospitals; Medical Education and History

The present economic cost of hospital service E M  
STYRON Illinois M J 92, 22, 35

Some changes in medical teaching and surgery C A  
PORTER Boston M & S J 9, 22, 35

The work of Pasteur and surgery P DELBET These  
med Pa 92, 22, 35

### Legal Medicine

The doctor and the law T McNULTY J Lancet, 9  
22, 36

Malpractice in the treatment of fracture Warner vs  
Pence (N D) 83 N W p 67 [184]

Payment of surgeon libel because of alleged mal  
practice Haskell vs Hanson (Main) 83 N W p 607  
[184]

Suit for damage for alleged failure to remove placenta  
Kraeger vs Birmingham (Miss) 83 N W p 324 [184]

Suit for damages for the alleged leaving of gauze in an  
operation found Pare vs Carter (W Va) 83 N W  
p 68 [185]

## GYNECOLOGY

### Uterus

The removal of the uterus, physiological, pharmacody  
namic and ethical deductions. P BALAM Rev Franc  
de gynec et d obst, 922, 22, 369

A study of the uterine peritonitis VIAL ARZ Prog de  
Medicina Madrid, 922, 22, 37

The use of sutures as tractors in the vaginal operation  
for prolapse T B CULLY Am J Obst & Gynec  
9, 22, 374 [184]

Restoration of the round ligaments in retroversion of  
the uterus A J NYSTAD Med J Anaheim, 9, 2, 375 [184]

The operative treatment of retroversion of the uterus  
with ligament-sutured ligaments H KROEMER Ztschr f  
Geburtsh u Gynak, 922, 22, 376

The present status of the fibroid tumor question H C  
FRANK Med Herald, 9, 2, 377

Supporting fibroids of the uterus R RIVIER Rev  
med & Romano, 9, 2, 378

Diffuse adenomyoma of the uterus J C ARMSTRONG  
Bol soc de obst y gynec de Buenos Aires, 92, 2, 379

Carcinoma of the uterus I B HILSON J Med Soc  
N Jersey 9, 22, 377

Cancer of the uterus F W MARLOW Canadian Pract  
9, 2, 379, 40

Observations on cancer of the uterus L D DE RHODE  
Ibid M J 922, 377

Cancer of the uterus R FRIMLEY Med Herald, 9  
2, 378

The treatment of uterine cancer R DEACA Texas  
State M J 9, 22, 379

Pre-cancerous conditions of the cervix uteri R R  
H COO Am J Obst & Gynec 9, 2, 379 [184]

A clinical study of cancer of the cervix uteri: summary  
of the results obtained by various methods of treatment.  
J W ROW Canadian M Ass J 9, 2, 379

The treatment of uterine cervical cancer J L F THE  
Rev Argent de obst y gynec, 92, 2, 379

The effect of radium in the treatment of cancer of the  
uterine cervix G ROTT and R. LEMCKE Rev de  
Med Pa 9, 2, 379

The action of radium emanation on the uterus and ovaries  
of guinea pigs. A. KOTZAROFF and M. MOLLER Gynec.  
et obst, 9, 2, 379

The identification and direction of the ureters in  
Wertheim operation T J PICCARDO Rev Argent de  
obst gynec 9, 2, 379

### Adnexal and Peri Uterin Conditions

Prominent opening into the urinary bladder operation  
curr. LUTHERUS Spital, 92, 22, 379

The accessory blood vessels of the fallopian tubes F  
JAYNE and J. HILMARZ Rev Franc de gynec et d obst  
92, 22, 380

Pneumoperitoneum with the Roentgen ray in the diag  
nosis of ovarian tumors A. CRISTO Scienze med  
922, 22, 380

The histology of ovarian teratomas (dermoid cysts)  
of endometrial (chorion) type J A SAMMOY  
Am J Obst & Gynec 9, 2, 381 [184]

Dermoid cysts of both ovaries with torsion of the left  
pedicle S E BIRNBAUM Bol Soc de obst y gynec de  
Buenos Aires, 9, 2, 381

Solid carcinoma of the ovary M R FLOOR Ann Surg,  
9, 2, 381, 382 [185]

### External Genitalia

The presence of three distinct and superimposed hymens  
in the same os S E BIRNBAUM Bol Soc de obst  
y gynec de Buenos Aires, 9, 2, 381

The formation of an artificial vagina ROSENTHAL  
Zentralbl f Gynec 9, 2, 381

The treatment of vesicovaginal fistula A J BRINCKLEY  
Rev argent de obst y gynec 922, 2, 381

### Miscellaneous

Urinary incontinence in the female E. L. JOHNSON, J  
J Am M Ass, 922, 22, 381

The hypogastric plexus in women A LA ARJET and  
P ROCHER Gynec et obst 9, 2, 381

Does an intimate relation exist between the female  
genital and the central nervous system SERRA  
WOOD-DEN Am J Clin Med, 9, 2, 381

The endocrine in gynecology J J ROCHA Kentucky  
M J 9, 2, 381

A note on variations of blood pressure during men  
struation S E. AWON Lancet, 922, 22, 381

A note on the anemous coefficient in menstruation  
M BOWEN Lancet, 9, 2, 381

Observations on temperature and other changes in  
women during the menstrual cycle W C CULLY, E M  
O'DONOVAN, and M ROSE-JOHNSTON Lancet, 9, 2,  
381, 382

- A case of anomaly of the female genitalia. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Meridity in the female. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- The value of transverse and transabdominal as in relation of the female pelvis with caesarean section. R. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- The treatment of meridity in the female. F. T. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- The female pelvis and the value of the vaginal route in the treatment of pelvic disease. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- The (Hufschmidt) method in large abdominal operations. L. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- A case of hysterectomy, subperitoneal hysterectomy and abdominal hysterectomy of the rectum in one stage. H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

- The latest of shock in gynecology. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- The new gynecological therapy in gynecology. J. T. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Some remarkable new experiences with radiotherapy. J. T. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Radiotherapy in gynecology. O. L. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Radiotherapy as treatment of meridity in women. L. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Radiotherapy with special reference to diseases of the female pelvis. H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Dissecting general tuberculosis, tuberculosis curative, radiotherapy. J. T. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Radiotherapy in gynecology. F. J. (Lyon) *Rev. med. de Berlin* 9, 216, 5.

## OBSTETRICS

### Pregnancy and Its Complications

- The duration of pregnancy. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Pregnancy without demonstrable em. or viral and its report of case. J. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Complications in the normal course of pregnancy. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- The morbidities of the blood during pregnancy and its treatment. J. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Caesarean section and asphyxia in the fetus. J. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- One hundred cases of eclampsia treated by the method of H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Glycemia of pregnancy and so-called renal diabetes. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- (Lytic) of pregnancy. J. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Pregnancy in the intercalary. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- (Lytic) of pregnancy. J. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Complications in the intercalary. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Complications in the intercalary. H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Complications in the intercalary. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Complications in the intercalary. H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Complications in the intercalary. H. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Complications in the intercalary. H. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- The action of adrenal cortex in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Adrenal cortex anomalies in labor. F. R. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

- Thrombosis of the uterus and perineum. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Thrombosis of the uterus and perineum. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

### Puerperal and Its Complications

- Observations upon the results of puerperal infection. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
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- Observations upon the results of puerperal infection. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Observations upon the results of puerperal infection. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

### Labor and Its Complications

- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Rev. med. de Berlin* 9, 216, 5.
- Dystocia due to congenital genital anomalies. A. H. (Lyon) *Wissenschaftl. M.* 9, 2, 231, 5.

The treatment of puerperal sepsis by the use of bacteriostatic substances with report of animal experimentation on the chemical disinfection of the blood. E. H. PIPER. *Am J Obst & Gynec* 9, iv 53. [1920]

The surgical treatment of puerperal gas bacillus infection of the uterus physometra. H. BRUNET. *Arch f Gynaek* 922, cxxv. [1921]

### Newborn

Relationship of eclampsia of pregnancy to acute otitis media. O. KUTVART. *Rev de laryngol* 9, xiv 503.

A thoracic talon delirud. (full term). W. G. ROBERTS. *Am Med* 9, xxviii, 65.

Patient foramen ovale. C. JONES. *N J Australas* 1922, x, 30. [1921]

Intracranial hemorrhage in the newborn with observations on fracture of the skull of the infant. A. C. BALANCE and C. A. BALL. *Verh. Lancet* 9, x cxxv, 69.

Hemorrhagic disease of the newborn with direct transmission into the longitudinal sinus through the anterior fontanel. J. A. SCHWARTZ. *J Am M Ass* 92, lxxxv 508.

A study of the shadows in the thorax of the newly born. L. R. DEBUS and E. C. SAKURAI. *Am J Dis Child* 9, xxiv 397.

### Miscellaneous

The work of Pfeister and obstetrics. WALLICH. *Presse med Par* 9, xxi, 57.

Problems of the present obstetrical situation. W. W. BBA. *Ohio Stat M J* 922, xviii, 746.

A survey of one year's work in the Department of Obstetrics, Hahnemann Hospital, Philadelphia. J. E. JAMES. *J Hahnemann Month* 9, lvi, 650.

Obstetrics and gynecology in relation to industry and its accidents. J. B. GONZALEZ. *Semin med* 92, xvii, 304.

The obstetrical future of women subjected to large incisions of the neck of the cervix during labor. P. BASARD. *Rev franc de gynéc et d'obst* 92, xvii, 55.

Maternal mortality. C. A. WITMER. *J Med Am Georgia* 9, x 41.

Maternal mortality of child bearing: its causes and how to deal with them. T. W. LUDW. *Lancet* 9, cxxv, 998.

## GENITO-URINARY SURGERY

### Adrenal, Kidney and Ureter

Adrenal insufficiency. W. AL. ARIZ. *Semin med* 922, xxi, 569.

Traumatic subcapsular rupture of the kidney. O. KELLER. *Arch d mal d reins et d organes (Paris)* 922, i, 47. [1921]

The kidney and ureter in obscure pain of the right abdomen. L. R. JASTRA. *Itern I J Surg* 9, xxv 386.

Kidney metabolism. C. F. BAR. *IT Chicago M Rec* 9, xlv 401.

What the clinician should demand of an examination and clinically to determine the function and the anatomical condition of the kidneys. J. TERNIER. *Brussels med* 9, ix 53.

A test of the capacity of the kidney to produce urine of high specific gravity. T. ANDERSON and M. C. SEXTON. *Arch Int Med* 9, xxi 559.

The importance of fluid intake in the treatment of kidney insufficiency. O. H. P. PIERCE. *Pennsylvania M J* 9, xxi 83.

Acute and congenital fused kidney. A. HESTMAN. *Ztschr f urol Chir* 9, ix 93.

The surgery of horseshoe kidney. H. ROBERTS. *Ztschr f urol Chir* 9, 427. [1922]

The diagnosis, interpretation, and biological treatment of renal disease. N. P. NORMAN. *N York M J & Med Rec* 9, cx 48.

The management of the carbuncle case. M. A. MONTGOMERY. *J Michigan Stat M Soc* 9, xxi 449.

Orthostatic or interstitial albuminuria and the incidence of suppurative kidneys in young adults. A. H. PEARSON. *Northwest Med* 9, x 323.

Renal physiology in nephropathies. W. C. BARBER. *Hahnemann Month* 922, lvi, 679.

Nephrography. L. PRILINGER. *Deutsche Ztschr f Chir* 922, cxvii 399.

Tubercular kidney diagnosed as tuberculous. H. S. JACK. *N York M J & Med Rec* 9, cxxv, 530.

The anaplastic type of tertiary renal syphilis. F. NORMAN. *Polish Assoc* 9, xxi 407.

The effect of anti-syphilitic treatment on the kidney. W. F. LOEWY and W. J. BLACKBURN. *Washington M J* 9, xxi.

A shocky classification of the types of nephritis. WALLICH. *Presse med Par* 9, xxi, 624.

Acute nephritis its interpretation and its treatment. P. MARIANA. *Prog de la clin Madrid* 9, x, xxi 36.

Some cases of pyelonephritis and their treatment by ureteral catheter. R. H. KIMBLE. *J urol med et chir* 9, xiv 87.

Pyelitis in children. J. F. DUFFY. *Kentucky M J* 92, ix 757.

The treatment of pyelitis with urotropin and with renal given by intravenous injection. V. LIRA. *Polish Assoc* 9, xxi, xxi part, 385.

Cystic kidney. E. WOODMAN. *Ztschr f urol Chir* 9, x, 385.

Solitary cyst of the kidney. J. DOUGLAS. *Ann Surg* 922, lxxvi, 646.

The latent distalities of the renal pelvis and their clinical significance. O. GALT. *Ztschr f urol Chir* 92, x, 30.

Hydro-nephrosis hydro-ureter case report. O. GALT. *Kentucky M J* 92, xxi, 778.

The histologic lesions of experimental aseptic hydro-nephrosis. R. DEBERNE. *Lancet* 922, cxvii, 68.

Renal colic in cases of renal and ureteral stones. H. H. MORGAN. *J S Reson J H BURKE, and W. B. T. ROW* *J Am M Ass* 9, x, lxxx, 65.

An unusual case of renal calculus report of case. A. DEBERNE. *N York M J & Med Rec* 92, cxxv, 530.

The diagnosis of small concretions in the renal pelvis and ureter. V. BURKE. *Ztschr f urol Chir* 922, x, 528. [1921]

Hypernephroma of the kidney removal with perineal incision. A. R. STEVENS. *N York M J & Med Rec* 9, cxxv, 307.

A case of carcinoma of the kidney in a young boy. P. M. H. OZGA. *Lancet* 92, cxxv, 1067.

The diagnosis of surgical kidney. W. H. BRUCE. *Northwest Med* 922, xxi, 407.



Extrarenal and ureteral pathology causing renal symptoms in the presence of negative urine R F HART  
 Northeast Med J 92 xii, 599  
 Some recent advances in urological surgery H O  
 BOGERT N York M J & Med Rec 92 cxvi, 489

The choice of anesthetic in major urological surgery  
 W H THOMA N York M J & Med Rec 92 cxvi,  
 5  
 Some problems in the surgery of the urinary tract W  
 C QUINCY Chicago M Rec 92 x, xli 408

## SURGERY OF THE EYE AND EAR

## Eye

The place of ophthalmology in the undergraduate medical curriculum W G M BYRNE Arch Ophth 9  
 h, 566  
 Graduate instruction in ophthalmology W H WILSON  
 Illinois M J 92 x, xli, 366  
 Methods of refinement in ophthalmologic diagnosis R  
 V. HARRIS Illinois M J 92 xli, 375  
 Adenoids and eye strain in school children—why many  
 lose school F R WOOD J Iowa State M Soc 92a,  
 22 451  
 Monocular and binocular vision T S BARRIE Brit  
 M J 922 ii, 360  
 Eye hazard and eyestrain in industry D J LYLE  
 Cincinnati M J 92 x, xli, 372  
 First case of eye accidents by the general practitioner  
 W H CRAW Colorado Med 922, xii, 276  
 The nursing of eye cases L KRYGIAN Traused Nurse  
 & Hosp Review 92, lxix, 403  
 The Wheeler plastic operation on the eyeball H H M  
 LYLE Ann Surg, 922 lxvii, 656  
 Trachoma S E MITCHELL J Oklahoma Stat M  
 Ass 922, xv, 124  
 Neoplasms of an accessory lacrimal gland A NATAL  
 Rev Assoc med argent 92, lxvii, 545  
 Contribution of the eye in dacryocystitis C H BAKER  
 J Michigan State M Soc 92 x, xli, 467  
 Anomalous forms of perimarginal conjunctivitis R  
 VALERO Rev med de Sevilla 922, xii  
 Spasm of the ocular muscles and diplopia M MAR  
 922 Arch de med chirug y special 922, 93  
 Monocular and binocular accommodation A DEANE  
 Am J Ophth, 922, 805  
 A case of bilateral exophthalmos caused by sympathetic  
 orders of the orbital trunks A F MACCALLA Lancet,  
 922, cccc, 666  
 A case of perimarginal conjunctivitis in tabetic with  
 dissection of the site of the differential pupilloscope in such  
 case A S TREVIER Arch Ophth 922, li 58  
 The relation of orbital affections to general conditions  
 S A BRIDGES Pennsylvania M J 922 lxvii, 74 (199)  
 Some observations on orbital growths: reports of three  
 cases W T SEIDERMAN Pennsylvania M J 922  
 lxvii, 70 (199)  
 Defects and diseases of the eyeball H S GRADLE and  
 H CARVER Ophth Lit 922, xviii, 435  
 Ocular apertorichoma b R GIFFORD Arch Ophth  
 922, li, 540  
 Ocular sarcoma with extension involving the brain  
 and spinal cord H NAA Brit J Ophth 922, vi  
 49, 337  
 Infection and prosthesis D J LYLE Am J Ophth  
 922, 829  
 The results of slow paranasal cystitis G H BURMAN  
 Am J Ophth 922, 878  
 The therapeutic use of nasal parient in sympathetic  
 ophthalmia A C ROODE and A K. NAY Arch Ophth,  
 922, li, 300  
 Polycystic ophthalmia W F STEIN Practitioner  
 1922, cix, 395

Focal infection in the tarsal conjunctiva tuberculous  
 ophthalmia C M JACK J Am M Ass 922, lxix,  
 576  
 Injury to the cornea and conjunctiva due to fish bile  
 F H VERNICKY and J B FRIEDENWALD Am J Ophth,  
 922, 837  
 A simple operation for pterygium L W CASLER  
 Arch Ophth 922, li, 577  
 A hole in the macula F D LA VEGA Rev Assoc  
 med argent 922, lxvii, 545  
 Three cases of posterior cortical cataract due to trauma  
 VAN LEE Bruxelles med 922, iii, 6  
 A new radium applicator for the treatment of cataracts  
 B ALLEN Am J Roentgenol 922, ii, 755  
 Some dislocated lenses: lesson on couching J L  
 GIBSON Med J Australia, 922, ii, 65  
 A new method of removing the lens by its capsule G  
 L JOHNSON Arch Ophth 922, li, 548  
 The importance of heterophoria tests in routine re-  
 fraction H H BRADSHAW Am J Ophth 922, 830  
 Penetrating corneal factors influencing the breadth of  
 fields C E FERRIS and G R VO Am J Ophth 922,  
 836  
 Color vision B CHANCE Ophth Lit 922 xviii, 468  
 Visual trends and colors C P SMALL Ophth Lit  
 1922, xviii, 391  
 The retina M FERNANDEZ Ophth Lit 922 xviii, 577  
 Toxic amblyopias D F HARRINGTON Ophth Lit  
 922 xviii, 35  
 Three cases of acute choroiditis of ethmoidal origin  
 BRAUER Bruxelles med 922, iii, 15  
 Observations in case of bipolar retinitis H H Mc  
 GUTER Am J Ophth 922, 863  
 Bilateral detachment of the retina in the nephritis of  
 pregnancy reattachment of the retina E M BLAKE  
 Arch Ophth 922, li, 556  
 Glaucoma retine E H CAR Texas Stat J M 922,  
 xviii, 376  
 The optic nerve W T DAVIS Ophth Lit 922,  
 xviii, 366  
 Ophthalmology and the lesser alcohol J M DOW J  
 Iowa Stat M Soc 922, xii, 446  
 A cabinet for galvanic electricity M E SMITH  
 Am J Ophth 922, 865  
 Velocimetry E J BROWN Am J Ophth 922,  
 867  
 Electroscopy C D J VAN Am J Ophth 922 v 867

## Ear

Further studies in the functional examination of the  
 acuity of hearing and its relation to the perception of  
 sounds of different pitches produced by the new electric  
 audiometer J G REHA Laryngoscope, 922, xxxii, 840  
 The study of the vocal ranges in lesions of the middle  
 ear L W DEAN and C C BURCH Ann Otol Rhinol &  
 Laryngol 922, xxi, 67  
 A safe artificial ear-drum J DUNN CHANT Lancet,  
 922, cccc, 68  
 Aurial lesions as cause of severe systemic infections T  
 J HARRIS Laryngoscope, 922, xxxii, 850



A review of hereditary syphilis of the ear M L BRANTZKY N York M J & Med Rec 9 2, cxvi, 516  
 Syphilis of the internal ear W T SALMON J Oklahoma Stat M Ass 93 xv 258  
 Acute mastoiditis complicated by acute concurrent disease C F ADAMS Laryngoscope 9 xxiii, 246  
 Acute mastoiditis associated with acute nephritis C M SAUTTER N York M J & Med Rec 92 cxvi, 284

A new method of anastomosing microscopic anastomosis of both mastoids P C HOGGES Am J Roentgenol 922, ix, 733 [201]  
 The indications for the radical mastoid operation M J GOTTLEBER Am J Surg 922, xxxvii, 260 [201]  
 The curative value of blood transfusions in postoperative mastoid conditions H HAYS Am J Surg 922, xxxvi, 295.

## SURGERY OF THE NOSE, THROAT AND MOUTH

### Nose

Observations on hay fever I C WALKER Ann Otol Rhinol & Laryngol 9 xxv, 660  
 Lower half headaches J J BERRY South M J 1922, xv, 940  
 Headaches of nasal origin E A ARMSTRONG J Oklahoma State M Ass 93 xv 50  
 Some phases of septal surgery J A DARRATT Med Times, 1921, L, 75  
 Metal trays and cobble's splint dressings I F S ESSEX München med Wochenschr 9 lxxv, 34  
 The present status of rhinoplastic interpretation as an adjunct in the diagnosis of cranial lesions of the accessory sinuses R H SKILLMAN Ann Otol Rhinol & Laryngol 922, xxiii, 855  
 Sphenoid-ethmoid anastomosis J J SULLA Ann Otol Rhinol & Laryngol 922, xxiii, 853  
 Total blindness of both eyes in boy 7 years of age cured by an ethmoid operation and opening of the sphenoid sinus D M HARRIS Laryngoscope 9 xxiii, 874  
 The acute antrum T B JOHNSON Lancet 922 cxix, 1060  
 Chronic infection in infections of the upper respiratory tract C A McWILLIAMS South M J 922, xv 934

### Throat

The bacteria of the tonsils and adenoids A WALL Brit M J 93 ii 505  
 The removal of infected tonsils early in life T W S ALLISON J Oklahoma Stat M Ass 93 xv 51  
 Some essential details for the complete removal of the tonsils by the reverse guillotine method M VILBERT Practitioner 922 cxi, 120  
 Tonsillectomy death E F VILLAS Wisconsin M J 93, xxi, 234  
 The suppurative end results as performed tonsillectomies C W RICHARDSON Ann Otol Rhinol & Laryngol 922, xxiii, 878  
 A rare case of retropharyngeal tumor J SARAVAN Gijdracht 9 428  
 Acute peritonsillitis of the larynx with report of case F A WILES J Iowa Stat M Soc 9 xii, 430  
 Bilateral abscesses of the larynx caused by mescaline barley S SALMON and M H CORRIE J Am M Ass 922, lxxxv, 540  
 A laryngeal plastic for bilateral posticus paralysis STEINLEBER Jahrbuchentf f deutsch Naturf Aerzt Leipzig 9

Notes on peroral endoscopy and laryngeal surgery C JACKSON Laryngoscope 922, xxiii, 863

### Mouth

F adenitis in oral diagnosis A B LANTIER Dental Cosmos 922 lxxv, 40  
 Oral cancer is its relationship to disease C S KILMER and H W BERRY Chicago M Rec 9 xlv, 22  
 An elementary lecture on food and feeding in relation to the tooth J S WALLACE Med Press, 1922, cxv, 408  
 The effect of defective diet on teeth the relation of calcium, phosphorus and organic factors to caries like and teaching tones defects L J GALLAGHER J Am M Ass 92 lxxxv, 257  
 Focal infection of dental origin C H MAJ Dental Cosmos 92, lxxv, 260  
 The X ray treatment of apical abscesses L H LIPP Dental Cosmos 92, lxxv, 26  
 Dental facts for physicians I HARRIS Dental Cosmos 92, lxxv, 161  
 Rinses obtainable by the co-operation of dentist and physician H C BERRY J Dental Cosmos 92, lxxv, 67  
 Roentgen therapy in dentistry J L GARNETT Am J Roentgenol 922, ix, 740  
 The development and correction of extensive cysts of the maxilla anatomical and prosthetic factors H W MACWILLIAMS J Am M Ass 92 lxxxv, 243  
 A case of bacterial gingivitis treated with apparatus success by radium G L FRANKLIN Am J Roentgenol 922, ix, 76  
 A combined gag and tongue retractor H F G BYRLE Lancet 92, cxix, 50  
 A well retaining tongue depressor A J HERRICK Laryngoscope 922, xxiii, 900  
 Epitheliomatous parotitis due to transference of Stenoc duct R B COO Wisconsin M J 922, xxi, 248  
 Tuberculosis of the salivary glands ARNOUX Ann natl de chir 9 18  
 A case of salivary calculus G D MALL Indian M Gaz 92, lxxv, 48  
 Salivary calculus of the floor of the mouth Ca lxxxv and M ARCHER J de med de Bordeaux 1922, xxxv, 68  
 The diagnosis of subacute and chronic inflammatory lesions of the mucous lining of the maxillary sinuses of Highmore W SCHLIMMER N York M J & Med Rec 1922, cxvi, 57

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*Supplementary to*  
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## CONTENTS

I	Authors	ii
II	Index of Abstracts of Current Literature	iii
III	Editor's Comment	viii
IV	Abstracts of Current Literature	217-272
V	Bibliography of Current Literature	273-288

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- A review of hereditary syphilis of the ear M L. BARTHELEMY N York M J & Med Rec. 9 2, cxvii, 350  
 Syphilis of the internal ear W T SALMON J Oklahoma State M Am 922, xv 378  
 Acute mastoiditis complicated by an acute concurrent disease C F ADAMS Laryngoscope 9 2, cxvii, 846  
 Acute mastoiditis associated with acute asperitis C M SATTEN N York M J & Med Rec 9 2, cxvii, 574

- A new method of nasopharyngeal stereoscopic observation of both nostrils P C. HODGES Am J Roentgenol, 1922 15, 753 [DIT]  
 The indications for the radical nasopharyngeal operation M J GOTTLEBY Am J Surg 922, cxvii, 300 [DIT]  
 The curative value of blood transfusion in postoperative nasal conditions H HAYS Am J Surg, 1922, cxvii, 303

## SURGERY OF THE NOSE, THROAT AND MOUTH

### Nose

- Observations on hay fever J C WALLACE Ann Otol Rhinol & Laryngol. 9 2, cxvi, 660  
 Lower half headache J J SERRA South M J 1922, xv, 960  
 Headaches of nasal origin E A. LUTHERBURY J Oklahoma State M Am 9 2, xv 39  
 Some phases of septal surgery J A BARRITT Med Times, 922, L 20  
 Metal inlays and cobbler splint dressings I P B. EASON Monach med Wochenschr 19 1922, 54  
 The present status of rhinographic interpretation as an adjunct in the diagnosis of catarrhal affections of the accessory sinuses R H SATTLER Ann Otol Rhinol & Laryngol 1922, cxvi, 815  
 Spheno-ethmoid sinuses J J SERRA Ann Otol Rhinol & Laryngol 9 2, cxvi, 85  
 Total blindness of both eyes in hay fever, 2 cases of are cured by an ethmoid operation and opening of the sphenoidal sinus D V. HENK Laryngoscope, 1922, cxvii, 874  
 The acute sinusitis T B JOHNSON Lancet 92 cxvii, 660  
 Climatic influence in selection of the upper respiratory tract C A McWILLIAMS South M J 922 xv 4

### Throat

- The bacteria of the tonsils and adenoids A. WALL Ritt M J 9 2, xv 100  
 The removal of infected tonsils early in life T W STALLINGS J Oklahoma State M Am 922 xv 33  
 Some essential details for the complete removal of the tonsils by the reverse guillotine method M VASTO Practitioner 922, 61 370  
 Tonsillectomy death E F VITALE Wisconsin M J 9 2, cxvi, 234  
 The suppurative end results in ed performed (cosmetic) tonsils C W REICHARDT Ann Otol Rhinol & Laryngol 9 2, cxvi, 678  
 A rare case of retropharyngeal tumor J SAPRALLA Onco 1922, 9 418  
 Acute perichondritis of the larynx, with report of case F A WILL J Iowa State M Soc 9 2, 430  
 Bilateral abductor paralysis of the larynx caused by mononucleus whealsy S SARRACIN and M H COITZ J Am M Am 922 cxvi, 396  
 A laryngeal pincer for bilateral posterior paralysis Struhschlag Jahrbuch f. deutsch. Naturf. Akad. Leipzig 9

- Notes on peroral endoscopy and laryngeal surgery C JACARO Laryngoscope, 922, cxvii 869

### Mouth

- Fundamental in oral diagnosis A B VASTO Dental Cosmos, 9 1922 40  
 Oral apices in its relationship to disease C S KERNERT and H W BEN Chicago M Rec 922, cxvi 415  
 An elementary lecture on food and feeding in relation to the teeth J S WALLACE Med Press 1922, cxv 408  
 The effect of defective diets on teeth the relation of calcium, phosphorus, and anabolic factors to caries-like and retarding tissue defect C J GRAYSON J Am M Un 922 cxvi 307  
 Focal infection of dental origin C H MAYO Dental Cosmos 9 1 306  
 The X ray treatment of apical abscesses L H LIPP Dental Cosmos 9 1922 80  
 Dental facts for physicians L HARRIS Dental Cosmos 9 1922 16  
 Results obtainable by the co-operation of dentist and physician M C BOWEN J Dental Cosmos 9 2, cxvi 67  
 Roentgen therapy in dentistry J L GARRETTSON Am J Roentgenol 9 2, 720  
 The development and restriction of extensive cysts of the maxilla anatomical and prosthetic factors H W MACWILLIAMS J Am M A 9 1922, 743  
 A case of tubercular granuloma treated with apparent success by radium G I FRANKLIN Am J Roentgenol 9 2, 756  
 A combined gag and tongue retractor H P G BOYLE Lancet 19 1922, 30  
 A self retaining tongue depressor A J HENKES Laryngoscope 92, cxvii 900  
 Pharyngeal parotiditis due to translocation of Stensen's duct A B COO BENSON told 9 2, 208  
 Tuberculosis of the salivary glands ANDREWS Am M J 9 2, 78  
 A case of salivary calculus G D STALL Is has M Soc 9 1922, 48  
 Salivary calculi of the floor of the mouth CA ALIX and M ANDREWS J de med de Bordeaux, 92 cxvi 645  
 The diagnosis of subacute and chronic inflammation lesions of the mucous lining of the maxillary antrum of HUGHES W SATTLER N York M J & Med Rec 92 cxvi 372

# CONTENTS—APRIL, 1923

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

BURKET, W. C. and McCLELLAN, W. B. An Aseptic Method of Intestinal Anastomosis: An Experimental Study 7

HENDERSON, A. An Improved Method of Supporting the Bladder and Vagina After Vaginal Hysterectomy for Prolapsed 30

ROBERTSON, The Formation of Vagina in Congenital Vaginal Malformation 33

ROBERTSON, The Formation of an Artificial Vagina 35

OSWALD, F. The Partially Trans-peritoneal and Partially Extraperitoneal Operation of the Hysterectomy—An Experimental Operation of the Dislocation of the Peritoneal Sac 36

RAYNAUD, R. P. Cataract Extraction with Iriskotom 70

##### Amblyopia

MILLER, W. R., and FRANK, E. B. Transnasal Eye Block Anesthesia in Surgery of the Pelvic Floor and Its Vessels

#### SURGERY OF THE HEAD AND NECK

##### Head

IRVING, J. B. and STURGE, E. Homoplastic and Heteroplastic Tumor Grafts in the Brain

FINDLAPPEL, M. N. Harelip and Cleft Palate

SCHROEDER, C. C. and DALAND, E. M. The Results of Operations for Cancer of the Lip: 1. The Mamma Hospital from 1900 to 1919

##### Neck

FRANK, G. E. Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radon Needles Through the Thyroid Membrane

KLOSS, H. and HELLWIG, A. Malignant Struma

RODGER, C. A. Thyroidectomy: A Modified Technique

#### SURGERY OF THE CHEST

##### Chest Wall and Breast

RELL, P. Extrapleural Thoracoplasty as the Treatment of Pulmonary Tuberculosis

RELL, P. Fibro-Adenoma of the Breast in the Male

##### Trachea and Lungs

BALBOVI, G. M. Hydrated Cyst of the Lung

HEDENRUB, E. Fatal Congestive Hemorrhages in the Lung and in the Central Nervous System Due to Momentary Bodily Luxation and Their Relationship to Porthos' Pressure Congestion

##### Heart and Vascular System

PLATT, A. Cervical Sympathectomy as Means of Stopping the Pain of Angina Pectoris

##### Pharynx and Esophagus

STERN, O. Multiple Cancer Formation: Carcinoma of the Vallecula Epiglottica and of the Esophagus 32

#### SURGERY OF THE ABDOMEN

##### Abdominal Wall and Peritoneum

MOCKENBACH, A. W. The Anatomy and Identity of Encysted and Infusile Hernia 3

CARLE, J. A. and COLLIER, G. H. Experimental Observations on the Localization of the Pans in the Parietal and Diaphragmatic Peritoneum 14

##### Gastro-Intestinal Tract

WILSON, R. T. Peptic Ulcer 21

CRONIN, M. Peptic Ulcer with Deformities of the Vagus, Evidenced by the X Rays, Changed to the Better by Treatment 24

HANCOCK, A. W. Cancer of the Stomach 215

CROSBY, R. P. Some Observations on the Surgery of Duodenal Membranes, with Call to Report of the Results of Treatment 5

JEWELL, R. C. Two Cases of Duodenal Obstruction in Infants 26

KLEINSMITH, P. The Treatment of Carcinoma of the Papilla of Vater 26

LANGE, W. A. WATSON, G. GRAHAM, M. W. PETERSON, H. J. and WALTON, A. J. The Treatment of Non-Malignant Affections of the Colon 217

RUCHTER, J. Atypical Operations—Especially Safe Subtotal Extirpation (Exclusion of the Tip of the Appendix)—in Cases of Severe Adhesions Due to Appendicitis 230

CARTER, R. F. The Pre-Operative and Postoperative Treatment for Colon Malignancy 230

- COLLINS, J. K. Asaptic Resection of the Intestine  
HOERTY, C. T. An Asaptic Technique for the Resection of the Intestine
- McL. J. R. Involvement of the Lymph Nodes in Carcinoma of the Rectum
- QUTALAN, W. S. Congenital Malformation of the Intestine—Atresia and Imperforate Anus
- Liver Gall-Bladder Pancreas, and Spleen
- GOSMAN, J. K. Congenital Obstruction of the Bile Ducts and Congenital Biliary Carcinoma of the Liver
- GOODELL, R. On the Kehr Symptom of the Hepatic Duct Be Replaced by a More Complete Procedure? The Ideal Cholecystotomy
- LACROIX, CH. The Relationship of Surgery to the Diseases of the Hepatobiliary System
- OSMAN, P. A Case of Torsion of the Gall Bladder
- FRA. ST. F. Acute Leucobacillosis in the Biliary Tract
- CHAMBERLAIN, J. R. Chronic Catarrhal Cholecystitis with Lipoid Deposit
- LEWIS, N. D. C. and RUTTEN, F. A. A Contribution to the Study of Connective Tissue Changes in the Gall Bladder
- McCLURE, C. W. and J. W. C. M. Studies in Pancreatic Function
- BOWEN, H. A. A Pancreatic Cyst in the Left Hypochondrium Excised
- LOWMAN, P. and DRACUTS, H. Faciated Hematomata of the Spleen
- 3 STEVENS, J. H. Compression Fractures of the Lower End of the Radius 34
- 3 DELANNOY, E. Rate With I. Jones 313
- 3 CAROT, F. and COLLET, H. Congenital Subluxation of the Hip Osteochondritis (or Coxal Plegia) Is Subluxation 33
- 3 WHITE, R. Incomplete Epiphyseal Fracture at the Hip 34
- WILKINSON, A. D. Incomplete Operation for Fracture of the Neck of the Femur 379
- PAINTER, C. I. I. J. on the Crucial Ligaments and Arteries of the Tibial Spine 39
- 3 MOORE, B. H. Subastragular Dislocation of the Foot 39
- 3 MYERS, A. A Case of Breaking-Off of the Tibial Calcaneus 39
- 3 Surgery of the Bones, Joints, Muscles, Tendons, Etc.
- 33 HENNINGSON, M. S. Surgery in Infantile Paralysis 31
- 33 REED, M. R. The Use of Large Reverse Grafts in the Healing of Chronic Osteomyelitis 312
- 33 CAMPBELL, W. C. Arthroplasty of the Elbow 313
- 3 ROBERTS, P. W. A New Approach to the Semitendinous Cartilages 313
- 33 MORGAN, H. Wounds of the Knee 313
- 33 LEVINE, The Graft Aspiration in Insarum Methone 313
- 34
- 34
- 34 SURGERY OF SPINAL COLUMN AND CORD
- 34 SCOTT, F. Fracture of Cervical Vertebrae 341
- 34 KROH and MINTZ. Cervical Ribs 341
- 34 OPPENHEIM, T. H. Transverse Spondylitis 341
- 34 SCOTT, G. E. Muscular Spondylitis—Spondylitis Deformans 341
- 34 CASTLE, R. B. Bony Bridging in Tuberculosis of the Spine 341
- 35 KALININ, S. The Operative Treatment of Scoliosis 341
- 35 HALL, BROWN, M. The Cervical Pathology and Treatment of Spinal Cord Lesions and Its Sequelae 341
- 35
- 35
- 35 SURGERY OF THE NERVOUS SYSTEM
- 35 LANDAUER, O. Technique of Nerve Suture 341
- 35 BAUMANN, F. and STOUT, O. The Physiological Effect of Lesion of the Peri Arterial Sympathetic Nerve Plexus. Peri Arterial Sympathectomy 341
- 37

## MISCELLANEOUS

- Fractures and Dislocations
- FRENCH, O. The Treatment of Ununited Fractures of Bones
- FRANK, W. The Operative Treatment of Supracondylar Fractures of the Humerus
- JANOWSKI, W. Advances in the Treatment of the So-Called T. peck Fracture of the Radius
- Clinical Zoology—General Physiological Conditions
- 27 DAIS, L. Observations on Cancer of the Uterus 351
- 37 MANNING, G. A Contribution to the Semantics of Carcinoma of the Genital Organs 353
- 37 WILLIAMS, P. F. Postabortal Hemolytic Streptococcosis 359

- HARRIS, C M, BROW, T H and DELCHER, H A. Abnormalities of the Kidney and Ureter  
A Case of Double Kidney and Double Ureter  
with Review of the Literature 260
- ANDRUS, Tuberculosis of the Salivary Glands 27
- Blood**
- BAER, G O. Blood Destruction During Exercise  
Blood Changes Occurring in the Course of  
Single Day of Exercise 247
- Blood and Lymph Vessels**
- WITTE, W C F and ZILNCAT, H F. Traumatic  
Rupture of the Femoral Artery with Hematoma 245
- CONRAD, Surgery of the Arteries. Transplanta-  
tion of Arteries by the Nagcott Method 245
- Surgical Diagnosis, Pathology and Therapeutics**
- CARROLL, O M. Extirpation of the Adrenals in  
Epilepsy 243
- KRUEGER, H. Scaphitis 243
- Röntgenology and Radium Therapy**
- DR. W. The Scientific Bases of Short Wave  
length Therapy 248
- LEVIN, I. The Intraperitoneal Insertion of Burned  
Capillary Glass Tubes of Radium Irradiation  
Results in 7 Cases of Tumor of the Gastro-  
Intestinal Tract 249
- CONRAD, J A. Statistics and Technique in the  
Treatment of Fibromyomas of the Uterus by  
Radiotherapy 50
- BECK, M. What Is the Best Method for the  
Treatment of Uterine Fibromyomata by Means  
of the Röntgen Ray 5
- CLARK, J G and KRYE, F E. The Treatment of  
Cancer of the Pelvic Organs with Moderate  
Irradiation 5
- BROWN, H H. Radium and Röntgen Ray Treat-  
ment. Metastatic Testicular Tumors 266
- DOUGLAS, H P and CARTER, J M. An X-Ray Demon-  
stration of the Nephrochrysalis Pseudoparasite—  
Normal and Obstructed 269
- FRANKEL, G E and WIDEN, B P. A Case of  
Tubercular Granuloma Treated with Apparent  
Success by Radium 7

## GYNECOLOGY

- Uterus**
- HENNINGSON, A. An Improved Method of Sup-  
porting the Bladder and Vagina After Vaginal  
Hysterectomy for Prolapsed 53
- CONRAD, J A. Statistics and Technique in the  
Treatment of Fibromyomas of the Uterus by  
Radiotherapy 50
- BECK, M. What Is the Best Method for the  
Treatment of Uterine Fibromyomata by Means  
of the Röntgen Rays 5
- DAVIS, L. Observations on Cancer of the Uterus 5
- Adnexal and Peri-Uterine Conditions**
- FRIEDBERG, Pseudoperitoneum Opening into the Urinary  
Bladder Operation Cure 54
- HIRST, J C, and MARRAS, C. The Rubin Test and  
Its Therapeutic Application 5
- SCHULTZ, H. Does the Ovary or Corpus Luteum  
Control the Ovarian and Uterine Cycle? 5
- External Genitalia**
- ROSENWART, The Formation of Vagina in Con-  
genital Vaginal Malformation 53
- ROSENWART, The Formation of an Artificial Vagina 53
- BULLOCK, H A. Utero Vaginal Fistula 53
- Miscellaneous**
- CHALK, H C. Levator Hernia (Perineal Hernia)  
Report of a Case Operated upon by the Con-  
bined Root. Review of the Twelve Previously  
Reported Cases 54
- MATTINGLIER, G. A Contribution to the Statistics  
of Carcinoma of the Genital Organs 55
- CLARK, J G and KRYE, F E. The Treatment of  
Cancer of the Pelvic Organs with Moderate  
Irradiation 55

## OBSTETRICS

- Pregnancy and Its Complications**
- LEFFLER, Pregnancy After Operation for Cancer of  
the Breast 57
- Labor and Its Complications**
- WIDEN, B P. Further Experience with Pituitary  
Extract in the Induction of Labor 57
- BICK, A C. Is Interference Justifiable After  
Twenty Four Hours of Labor When No Other  
Indication Is Present? 257
- HOLMES, R W and BURROCK, A L. The Test of  
Labor in Relation to Cesarean Section. Com-  
parative Results Obtained by Elective and  
Secondary Operations Based upon Personal  
Experience of Ninety Two Cases 58
- HIRST, J C and VAN DOLERY, W W. Cesarean  
Section. Its Indications and Technique 59
- Puerperium and Its Complications**
- WILLIAMS, P F. Postabortal Hemolytic Strepto-  
cococcus 59

## GENITO URINARY SURGERY

## Adrenal, Kidney and Ureter

HARRINGTON, C. M., BROWN, T. H., and DYLLER, H. A. Mucocle of the Kidney and Ureter Double Kidney and Double Ureter

CRANTZ, J. G. The Nature and Significance of Renal Stasis

BARNET, J. D. Recurrent Renal Calculi

HOTER, O. Obstruction of the Common Bile Duct and Anemia Due to Solitary Cyst of the Kidney

ORLICKOFF, F. The Partially Transperitoneal and Partially Extraperitoneal Operations on the Kidney: Intraperitoneal Operation After Division of the Peritoneal Sac

FURINA, H. D. Suprarenal Ureters with Extra renal Openings

LACRIZ, T. F. Extreme Dilatation of the Ureters

ROBERT, J. A Case of Cystic Enlargement of the Vesical Extremity of the Right Ureter and its Treatment

ASCHVITZ, P. W. Primary Tumors of the Ureter

## Bladder, Urethra, and Penile

SCHWARTZ, O. Investigations on the Physiology and Pathology of Bladder Function. Remarks on the Pathology of the Vesical Neck

KATZBERGER, H. L. Bladder Ulcer of the Bladder A Further Report

## Genital Organs

FELDER, E. Experience with the Perineal Operation for Prostatic Abscesses and Prostatic Stenosis

LEWIS, J. Infections of Prostatic Adenoma

CAVALLI, C. L. Traumatic Dislocation of Both Testicles

SEIDMAN, J. G. and HELLER, E. P. A Congenital Defect of the Anterior Abdominal Wall and Cryptorchidism Report of Case

LECHTENSBERG, R. The Clinical Aspect and the Treatment of Cryptorchidism

BOWEN, H. H. Radium and Roentgen Ray Treatment in Metastatic Testicular Tumors

## Miscellaneous

PELLEGRINI, Accurate Chromocystoscopy

EDMUNDS, D. V. Calculous Abscess Report of Case

WALKER, J. T. The Relation of Calcified Udders and Glands to Urinary Surgery

## SURGERY OF THE EYE AND EAR

## Eye

PACHET, C. Preliminary Communication on Injury to the Cornea of Diabetes Insipidus with Bitemporal Hemianopia

DOUGLASS, H. P. and CARTER, J. M. An X-Ray Demonstration of the Neurochiasmatic Passageways—Normal and Obstructed

WOOD, A. C. and KNAPP, A. The Diagnostic and Therapeutic Use of Uveal Pigment as a Marker of the Uveal Tract and Sympathetic Ophthalmia

RATNAKAR, R. P. Cataract Extracted with Endotomy

## SURGERY OF THE NOSE THROAT AND MOUTH

## Nose

EMER, I. F. S. Metal Inlays and Cobblestone Splint Dressings

WALSH, M. B. Report of Case of Bilateral Facial Sinus Empyema, Subdural and Supratentorial Abscess, with Recovery

HUSSE, D. V. Total Blindness of Both Eyes in Boy 7 Years of Age Cured by an Ethmoid Operation and Opening of the Sphenoid Sinus

LIVSHITZ, B. The Clinical Importance of Oedema of the Stylohyoid Ligament

JACKSON, C. Notes on Peroral Endoscopy and Laryngeal Surgery

## Mouth

FERGUSON, M. V. Harelip and Cleft Palate

SCOTT, C. C. and DALLAN, E. M. The Results of Operations for Cancer of the Lip in the Massachusetts General Hospital, 1900-1919

FRANK, G. E. and WIDMANN, B. P. A Case of Tuberular Gingivitis Treated with Apparent Success by Radium

ARMOUR, Tuberculosis of the Salivary Glands

## Throat

FRANKLIN, G. E. Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radium Needles Through the Thyroid Membrane

## BIBLIOGRAPHY

## GENERAL SURGERY

## SURGICAL TECHNIQUE

Operative Surgery and Technique	273
Septic and Antiseptic Surgery	73
Anesthesia	73
Surgical Instruments and Apparatus	73

## SURGERY OF THE HEAD AND NECK

Head	73
Neck	274

## SURGERY OF THE CHEST

Chest Wall and Breast	74
Trachea and Lungs	74
Heart and Vascular System	7
Pharynx and Esophagus	75
Miscellaneous	75

## SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	7
Gastro-Intestinal Tract	76
Liver, Gall Bladder, Pancreas, and Spleen	75
Miscellaneous	78

## SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.	79
Fractures and Dislocations	79
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	280

## SURGERY OF THE SPINAL CORD AND CORD

	280
--	-----

## SURGERY OF THE NERVOUS SYSTEM

	28
--	----

## MISCELLANEOUS

Chronic Entires—General Physiological Condi- tions	9
---	---

Sera, Vaccine, and Ferments	8
Blood	8
Blood and Lymph Vessels	282
Surgical Diagnosis, Pathology, and Therapeutics	8
Röntgenology and Radium Therapy	28
Hospitals, Medical Education and History	83
Legal Medicine	83

## GYNECOLOGY

Uterus	283
Adnexal and Peri Uterine Conditions	83
External Genitalia	83
Miscellaneous	284

## OBSTETRICS

Pregnancy and Its Complications	84
Labor and Its Complications	284
Puerperium and Its Complications	284
Newborn	85

## GENITO-URINARY SURGERY

Adrenal, Kidney and Ureter	85
Bladder, Urethra, and Penis	85
Genital Organs	86
Miscellaneous	87

## SURGERY OF THE EYE AND EAR

E	87
Ear	287

## SURGERY OF THE NOSE, THROAT AND MOUTH

Nose	288
Throat	288
Mouth	288



## EDITOR'S COMMENT

FROM its inception it has been the purpose of the editors of the INTERNATIONAL ABSTRACT OF SURGERY to present to its readers accurate and discriminating reviews of the world's best surgical literature. How large a task this has become is suggested by the fact that in the 131 abstracts appearing in this issue twenty-one different American journals and thirty-three different foreign journals are represented. In addition to the articles which are represented by abstracts, every article with a surgical significance, appearing in the journals coming to our desk, is listed in the bibliography of current literature. The articles so listed in this issue represent fifty-five different American journals and 60 different foreign journals.

In this abundance of material certain articles are of particular significance in that they represent new ideas, or old ideas seen in a new light or that they indicate an error; theories that have previously been accepted as fundamentally correct.

It is the purpose of the editors to call attention from time to time in these columns to investigations and discussions that they believe to be of especial importance in order that such reports may receive the proper emphasis, and not be lost sight of in the abundance of material presented.

THE use of radium and the X-ray in the treatment of malignant disease and of uterine fibromyomata constitutes one of the most vital problems of present-day medicine. The constant attempt to bring the therapeutic agent into direct contact with the tissue to be treated is reflected in Mahler's suggestion (p. 220) that in the treatment of carcinoma of the thyroid gland needles be passed through the thyrohyoid membrane directly into the affected tissue, and in Levin's report of two cases in which improvement followed the burying of capillary glass tubes, containing radium emanation in tumors of the gastro-intestinal tract (p. 49).

The effort to bring the therapeutic agent into direct contact with the tissue to be treated is

primarily due to the better results attained under such conditions. Another phase of the question, the effect of radiation from a distance upon normal tissues adjacent to those to be radiated, for instance the effect of the roentgen ray or of radium upon the large bowel and bladder in the treatment of uterine fibromyomata, has not yet received sufficient consideration. The surgeon is warned in the treatment of cancer of the pelvic organs to aoid causing radiation proctitis by passing the normal tissues aside with a well-placed vaginal pack (Clark and Keene p. 255) but no mention is made of the possible sclerosing effect of radiation upon the blood vessels of adjacent viscera, and of the after-effects of radiation upon these viscera. The Abstract is looking forward expectantly to reports of experimental work with the X-ray and radium that will determine the late results of radiation upon normal structures.

ONE of the most interesting and suggestive contributions to the literature of the month is the discussion on the treatment of non-malignant affections of the colon (p. 217) a symposium presented by five different surgeons at a recent meeting of the British Medical Association in Glasgow. To the surgeon who has come to regard any attempt to combat the symptoms of visceropneumonia by surgical method as middle-aged surgery it will come as a surprise to read that Waugh has operated with remarkably successful results upon 518 patients (the abstract of a former report covering 308 cases appeared in this journal in June, 1920, p. 41) because of symptoms due to an extremely mobile caecum and colon. Gray's experience, in the main, corroborates Waugh's conclusions.

As several of the writers in question have pointed out with reference to visceropneumonia this condition with its resulting complications—constipation, intestinal intorsion and chronic ulceration—is a disease of early adult life, and a X-ray measures which successfully counteract it become preventive medicine in its best sense.

# INTERNATIONAL ABSTRACT OF SURGERY

APRIL, 1923

## ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

### OPERATIVE SURGERY AND TECHNIQUE

Berket, W. C., and McClure, W. B. An Aseptic Method of Intestinal Anastomosis. An Experimental Study. *Surg Gynec & Obst* 9 3335 3 6

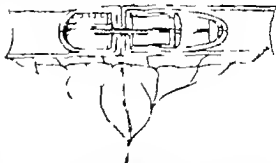
In the method described, the authors use an instrument formed of male and female halves. A protected cylindrical knife blade contained in the male half of the instrument cuts against the female half which consists of a solid block. The aseptic operation is performed as follows:

The intestine is resected between ligatures with the actual cautery and after the mesenteric vessels in the operative field have been cared for each cut end of the gut is invaginated with half the instrument to such an extent that double pursestring sutures may be tied down over the outer end of the half of the instrument. The halves of the instrument are then brought together and the butted ends of the intestine anastomosed with interrupted mattress sutures. The mesentery is closed with continuous glove suture. When the gut ends have been completely sutured, the lumen is re-established by cutting out the intervening gut wall diaphragms by gently manipulating the cylindrical knife blade through the intestinal wall. The anastomosis is completed by sliding the instrument down the intestine wall away from the site of the operation. It will then be passed out of the intestines by peristaltic movement.

This method has been employed frequently on freshly isolated pig intestine and also in aseptic operations on living dogs under ether anesthesia. Its advantages are summarized as follows:

The closed butted ends of the gut are cut through and the lumen is promptly re-established without soiling of the operative field or the withdrawal of any material or instrumental device through the line of suture.

No mechanical device is left in situ to interfere with the healing, as in the use of the Murphy



Diagrammatic longitudinal section. Instrument is invaginated into gut ends and parts brought together for intestinal suture and manipulation of the cylindrical blade to cut out the intervening diaphragms of gut wall.

bottom. The cylindrical knife is removed from the field before the operation is completed.

3. The remaining intimated cuff of intestinal wall is of desirable length, and is neatly sharply and uniformly cut.

4. An anastomotic opening is obtained which in diameter closely approximates the gut lumen and prevents temporary obstruction or too great narrowing of the lumen.

5. Soiling is reduced to the minimum, dependent upon the effectiveness of the cautery and the skill with which sutures are placed in the submucosa without penetrating the mucosa.

WALTER C. BERKET, M.D.

### ANÆSTHESIA

Meeker, W. R. and Fraser, E. B. Transverse Nerve-Block Anesthesia in Surgery of the Pelvic Floor and Its Vicinity. *Surg Gynec & Obst* 9 3355 3 6

Block of the sacral nerves may be accomplished by four different methods: (1) epidural, sacral extradural, and caudal anesthesia induced by the

injection of anesthetic solutions into the sacral canal by way of the sacral hiatus, (3) block of the nerve trunks after the plexus has been formed, (4) paramedial, premedial, and anterior sacral anasthesia or block of the nerves at their exits from the anterior sacral foramina, and (5) transmedial anasthesia, or block by means of injections through the posterior sacral foramina.

In the first method 20 cc. of a 1 per cent solution of novocaine or bicarbonate solution are injected into the sacral canal. Anesthesia usually results within twenty or thirty minutes; its upper limit is variable but as a rule it includes the entire pelvic floor and viscera. This method fails to give operative anesthesia in 10 to 15 per cent of cases and is followed by toxic symptoms more frequently than other methods.

Block of the pudic nerve posterior to the spine of the ischium and on the medial surface of the inferior ramus of the ischium has been advocated. The methods are technically difficult and do not give extensive operative anesthesia of the pelvic floor even though both pudic nerves are properly blocked.

The premedial, or paramedial, method is also technically difficult; its results being consequently undependable. It is usually combined with local infiltration of the tissues. It fails to cause complete operative anesthesia in about 10 per cent of cases.

For these reasons the transmedial method has been employed for the upper four sacral nerves, with low epidural injection for the fifth sacral and coccygeal fibers. Complete operative anesthesia resulted in 22 of 25 consecutive cases. In the three cases in which the anesthesia was not complete, it was sufficient for the completion of the operation without additional infiltration of the operative field or inhalation narcosis. The series included twenty-one patients who had a cold on the morning of the operation, forty-one who were in the hospital convalescing from a previous operation, thirty-two for whom local anesthesia was advised because of poor general condition, ten who were sugar free at the time of operation, five patients with marked anemia, two had had previous transfusions, five patients with chronic pulmonary tuberculosis, in two of whom the condition was active at time of operation, and six others each weighing over 200 lb.

Complications and after-effects have been few and of no serious concern. The variety of operations performed by this method demonstrates that the block of the sacral nerves the entire pelvic floor is anesthetized with the viscera lying below the pelvic peritoneum. The more dependent part of the peritoneum is also anesthetized so that it may be opened and closed, but any considerable pull may be transmitted outside of the anesthetized field and cause pain.

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## SURGERY OF THE HEAD AND NECK

### HEAD

Murphy J. B. and Sturm, E. Heteroplastic and Heteroplastic Tumor Grafts in the Brain. *J. Am. Med. Ass.* 9:22 1924, 30.

Shirai of Tokyo reported that heteroplastic tumors grow readily when inoculated into the brains of normal adult animals. Previously tissue had been transplanted to different species only in the embryo and in adult animals which had been exposed to the roentgen rays.

The lymphoid cells are considered to form the defensive mechanism against tumor grafts because:

1. Numerous lymphocytes occur about heteroplastic graft.

Foreign tissues growing in the chick embryo cause no cellular reaction until after the eighteenth day of incubation, when the graft starts to disappear rapidly and completely.

3. A graft of adult chicken spleen renders the embryo resistant to heteroplastic tumors during the early stages of incubation.

4. Adult animals deprived of the major portion of lymphoid tissue are deprived of their ability to destroy the foreign tissues; in such animals grafts will grow actively.

5. Foreign tumors can be carried through several generations in irradiated animals.

The virus inoculated transplantable mouse sarcoma into the brains of rats. When the graft came in contact with the ventricle there was a reaction which suggested the reaction caused by foreign graft in the subcutaneous tissues and was followed by necrosis of the graft. Of the grafts embedded in the frontal lobe at a distance from the ventricle, from 80 to 100 per cent grew in without causing cellular reaction.

Mouse sarcoma was successfully grown in the brains of rats, guinea pigs, and pigeons. A mouse carcinoma used as heteroplastic graft grew less rapidly.

A bit of the animal's own spleen inoculated into the brain with the heteroplastic tumor tissue prevented the growth of foreign cells. Of fifty rats inoculated with spleen and tumor 84 per cent showed complete inhibition of tumor growth. In 16 per cent only a few of the tumor cells were left. Of forty-eight control rats inoculated with sarcoma alone 83 per cent developed tumors, some of which replaced almost the entire frontal lobe. Spleen tissue derived from another animal failed to inhibit the growth of the tumor.

Mice highly resistant to subcutaneous heteroplastic transplants of mouse tumor gave no evidence of this resistance when the tumor was inoculated into the brain.

WALTER C. BURKETT, M.D.

Federapfel, M. N. Harelip and Cleft Palate  
*Surg. Gynec. & Obst.* 9: 2201, 1909

The repair of harelip should be done as soon after birth as possible. In most cases it is done at the end of the third or fourth week.

Proper pre-operative care is essential. The infant should not be allowed to nurse until the borders of the lip are brought together as much as possible and held by a strip of adhesive. The adhesive tape properly placed prevents the orbicularis oris muscle from pulling the lip from the midline and increasing the deformity.

In the operation for single harelip the lip must be freed from its attachment to the maxilla. The borders should be so cut that symmetry of the nostrils is readily obtained with an invisible scar and a perfect midline border with good contour.

The sutures should be so placed that the raw surfaces will be in contact without any curling or buckling of the edges. In order to prevent tension adhesive is fastened to the cheek on each side. The edges near the lip are turned in and a strong paraffin silk ligature is then passed through the lip into the lip, midway between the skin and mucous membrane, in the form of mattress suture. By tying the loose ends, sufficient tension can be brought to bear so that the approximating sutures will not be torn out by the sphincter-like action of the orbicularis muscle.

Great care is necessary in operating upon a cleft palate. In some instances mechanical splinters are more efficient than surgical correction of the cleft is alone.

JAMES C. BRADWELL, M.D.

Stramone, C. C., and Daland, E. M. The Results of Operations for Cancer of the Lip. A Study of the Massachusetts General Hospital from 1899 to 1919. *Surg. Gynec. & Obst.* 9: 222, 1906

In reviewing the results of operations for cancer of the lip during a ten year period at the Massachusetts General Hospital the authors failed to find any new facts in regard to the etiology of the condition.

The total number of cases available for study was 187. The end result as learned in 35.

Specimens from 3 cases in which the end result is known are also available for study. An attempt is made to classify them into groups according to the degree of malignancy as indicated by the differentiation of the cells and the number of mitotic figures. It appeared from the results in these groups that, other things being equal, such as the duration and extent of the growth, the amount of differentiation of the cell has distinct bearing on the prognosis, the prognosis being better the greater the differentiation.

The presence of palpable glands did not necessarily mean that metastases had occurred, as in many cases in which the presence of glands was noted in the histologic pathologic examination failed to show cancer. The presence of demonstrable metastatic cancer in the glands was a grave sign.

The first sign was described as a "sore" or "cold sore" in eighty-three cases, a scab in nineteen, a wart or tumor in thirty-eight, and a crack, blister, cut, or pimple in the remainder. The presence of palpable glands had little relation to the size or duration of the tumor except in the obviously far advanced cases. The growth was situated on the left side in fifty-seven cases.

The radical operation was performed in 133 cases. In seventy-three, the glands were removed from one side of the neck, and in fifty-nine from both sides. The palliative operation was performed in forty-one cases, the growth being removed from the lip without dissection of the glands of the neck.

In the cases of radical operation there were three postoperative deaths. There was no operative mortality following the palliative operation.

With one exception, the postoperative complications were due to some form of infection.

Secondary operations for local recurrence of the disease were performed twice, both of the patients are well three or more years after the operation.

In seven cases in which the neck had been previously dissected, a second extensive dissection was performed for recurrence. All of these patients are dead, three as a result of the operation and five of the disease.

The end results of the radical operation in ninety-eight cases are known. Sixty-eight patients are living and well without evidence of the disease more than three years after the operation, twenty-seven died from recurrence of the disease and three died as the result of the operation. The cures following the radical operation therefore equaled 63 per cent.

The relation of the size of the growth on the lip to the prognosis is shown by the small percentage of cures in the cases requiring a plastic operation to close the defect after the excision of the growth. Of fourteen patients traced, only four are living and well.

Of nineteen patients traced who had involvement of the glands, only five are well, while of seventy-two without gland involvement sixty-three are well.

In many of the cases the site of recurrence could not be determined. In the only patient dying of recurrence on whom an autopsy was performed there was local recurrence only.

The palliative operation was performed in forty-one cases. Most of these the radical operation was contra-indicated on account of the patient's physical condition or age. The results are known in thirty-five cases of this group. In twenty a three-year cure was obtained.

The average length of life of all patients dying of recurrence was approximately two years from the date of operation. When the glands removed at operation showed cancer the length of life was slightly shorter than the average. With one exception in the cases of patients dying of the disease, the recurrence developed or death occurred within the three year limit. One patient died of glandular recurrence seven years after the primary operation.

JAMES C. BRADWELL, M.D.

## NECK

Pfeiffer G. L.: Radiotherapy in Carcinoma of the Larynx, with Special Reference to Radium Needles Through the Thyroid Membrane. *J. Radiol.* 9: 111, 51

The most recent method of treating carcinoma of the larynx consists in the direct application of several 3 mm. tubes of radium following a preliminary tracheotomy.

Radium may be applied to carcinoma of the larynx directly by four methods: (1) the insertion of emanation seeds into the diseased tissue by direct laryngoscopy; (2) the introduction of radium needles attached to a strong thread; (3) the application of radium under direct vision through a laryngotomy incision; and (4) the insertion of radium needles through the thyrohyoid membrane.

A disadvantage of the first method is that the emanation seeds may be inhaled, an occurrence leading to abscess of the lung. The second method is contra-indicated if the tissues are friable because under such conditions it is extremely difficult to keep the needles in place. The insertion of needles into the diseased tissue through the thyrohyoid membrane was first tried by the author on cadavers and then used in only one case reported in this article.

External radium, both the roentgen ray, was given to devitalize the primary cancer cells and metastatic lymph nodes, and the radium was introduced about a week after the preliminary tracheotomy. The needles were sterilized by suspending them in boiling water and were then attached to sterile copper ligature wire. The author states that iodine should not be employed in sterilizing the skin as it causes a dermatitis. Ten milligram needles can be inserted approximately 1 cm. apart and left in place four to six hours. Considerable edema will result, but this will be taken care of by the preliminary tracheotomy. If the disease has not completely disappeared at the end of six weeks the procedure may be repeated.

The treatment indicated retarded the progress of the condition in the author's cases, but sixteen of the thirty-three patients ultimately died of the disease. The author draws the following conclusions:

1. A preliminary tracheotomy is desirable.
2. The roentgen ray applied externally gives at least partial relief of the symptoms.
3. The insertion of radium needles into the diseased tissue through the thyrohyoid membrane is practical and its results justify further trial of the method.
4. As the condition tends to recur the patient should be kept under close observation for a long time.

PAUL W. SWARTZ, M.D.

Kloss, H., and Hoffwig, A.: Malignant Struma (Das Struma maligna). *Arch. Klin. Chir.* 9: 2, 787

In the vicinity of Frankfurt about 3 to 4 per cent of nodular goiters become malignant. Carcinoma occurs most frequently in districts where goiter is

endemic. A nodular goiter also precedes the cancer and injures to the tissues may favor the cancerous degeneration. Females are more often affected than males of twenty patients, seventeen are women. The condition occurs most frequently in the fifth decade of life. Most malignant growths developing in goiter are carcinomas. The metastases occur chiefly in the lungs and the bones, particularly the spine, sternum, pelvis, and ribs. The development of the cancer is recognized by an accelerated growth of the goiter, an increase in its consistency and a decrease in its mobility, difficulty in swallowing, and, in the later stages, respiratory disturbances. The Mauthner district the development of the symptoms of esophageal cancer is an important early symptom of malignant growth. Occasionally high temperatures are observed. Carcinoma of the thyroid is rare.

Exploratory puncture is contra-indicated. Laryngoscopy should be done only by experienced physicians. Staphy is justified only when the radical operation can be performed immediately afterward if malignancy is found. The average duration of malignant goiter is about two years. The treatment should be total extirpation of the thyroid gland with postoperative roentgen irradiation. In cases of progress of infiltrating growth the roentgen irradiation alone, in accurate dosage, is preferable to surgical treatment. Kloss (2)

Reader C. A.: Thyroidectomy. A Modified Technique. *J. Am. Med. Ass.* 9: 1411, 1412

Following resection of the thyroid we too often see: (1) a raw area under the flap, (2) a tender nodule where the depressor muscles were sutured, (3) an annoying adhesion between the trachea and skin at the point of drainage which also causes edema of the neck or (4) an abnormal deepening of the suprasternal notch due to a loss of the stimulus and retraction of the skin by the adherent trachea.

The author presents modifications in technique designed to overcome these sequelae. 1. Goiter of medium size he extends his incision through the deep cervical fascia, reflecting the latter as the lower layer of the flap. This permits sufficient retraction of the sternohyoid muscles to give the desired exposure without cross sectioning. The collar incision of Kocher as originally described and generally practiced today extends only to the deep fascia, leaves the sternohyoid and sternothyroid muscles unincised and is most applicable to large goiters in which transverse division of the sternohyoid and sternothyroid muscles is necessary and to small goiters for which only moderate exposure is required.

Adhesion of the platysma to the deep fascia is followed much oftener by than any indication that an adhesion of the fascia to the deeper muscles. In order to prevent adhesion of the skin to the trachea the author passes a rubber tube down through a stab wound in the ribbed muscles and brings it out through the line of incision lateral to the supra-

sternal notch. This permits closure of the ribbon muscles over the trachea and suture of the skin in the midline where it is thinnest and the platysma is absent.

For ligation of the inferior thyroid artery Roeder makes a 1 in. incision in the line of the full collar

incision to be made later. If the patient withstands the operation better than anticipated slight extension of this incision will permit resection of the lobe. Reflection of the deep fascia with longitudinal splitting of the ribbon muscles gives ample exposure.

S. J. STOKES, M. D.

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

Bull, P. Extrapleural Thoracoplasty in the Treatment of Pulmonary Tuberculosis. *Bull. M. J.* 9, 11, 7

On the basis of seventy five cases of extrapleural thoracoplasty Bull comes to the following conclusions:

In unilateral or mainly unilateral pulmonary tuberculosis which is not cured by rational expectant treatment or by artificial pneumothorax, good results can be obtained by means of extrapleural thoracoplasty.

On the whole, it may be said that the indications for extrapleural thoracoplasty coincide very closely with those for artificial pneumothorax and the former should be tried when the latter cannot be used. Care must be taken in determining the condition of the other lung. Tuberculosis of the larynx or of one kidney does not constitute a contra-indication. Tuberculosis of the larynx will often heal after successful thoracoplasty. This operation is best performed in two stages.

Bull has done most of his work with the aid of local anesthesia but is becoming more inclined to the use of general anesthesia. In the first stage of the operation he resects from the eleventh to the sixth or fifth rib. In the second stage, 1 or 2 or 3 weeks later he resects the remaining upper ribs. After the fourth rib has been resected he performs sympathectomy which, in addition to collapsing cavities in the apex, facilitates the resection of the upper ribs.

Fat implantation after the method of Tuffier is done to compress the pex still further. Seven centimeters of the eleventh rib, 1 cm. of the tenth and ninth ribs, 15 cm. of the following ribs including the fourth and as much as possible of the upper ribs are resected. It is important to resect backward far beyond the costal angle up to the costal tubercle.

One of the chief unpleasant sequelae is dyspnea. This is due to a great extent to mediastinal flutter and soon disappears spontaneously.

The operation is followed by scoliosis with the convexity toward the side operated upon, due to paralysis of the long muscles of the back on this side.

The immediate mortality in the author's series of cases was 1 per cent. A three year cure was obtained in about one in three.

RALPH B. BETHA, M. D.

Rud, H. Fibro-Adenoma of the Breast in the Male (Ueber Fibroadenome der Mamma bei Männern). *Deut. Jid.* 922, 127, 53

Carcinoma of the male breast is not rare. Benign tumors are less common. According to Williams statistics regarding 5,435 neoplasms, 2,422 (5 per cent) in the breast, and of the latter twenty five (1 per cent) involved the male breast and only six were benign.

Among malignant tumors carcinoma stands first; the benign tumors of the male breast are fibroadenoma, fibroma, adenoma, lipoma, atheroma, myoma, tuberculoma, syphiloma, and cystic tumors. Myxoma, angoma, osteochondroma and mixed tumors are very rare.

Five cases of fibro-adenoma of the male breast observed by the author are reported. All of them occurred in men between the ages of 8 and 2 years. They ranged in size from that of a hazelnut to that of a mandarin. In no case was the nipple retracted. Malignant change is possible. In some circumstances it is not easy to make a decision regarding the presence or absence of malignancy from the histologic picture. In the author's opinion sharp demarcation of the tumor indicates a benign growth only in the female. In the male, diffusely growing fibro-adenomata are found.

If the differential diagnosis gynecomastia and mastitis pubescentium virilis can be easily excluded. In four of the five cases reported, trauma preceded the tumor by from three weeks to eight months. Tumor frequently develops from chronic mastitis. While symptoms of mastitis are present the treatment should be conservative. Later the tumor should be excised. If the tumor is of diffuse growth, amputation of the breast with removal of the axillary glands is indicated. If the tumor is circumscribed, extirpation usually suffices.

PEREZ (2)

### TRACHEA AND LUNGS

Balbois, G. M. Hydatid Cyst of the Lung. *Berlin M. & S. J.* 922, 127, 579

Echinococcus cyst of the lung is one of the conditions to be ruled out in cases of pulmonary disease with bloody sputum or frank hemoptysis, especially among the immigrant classes from continental Europe and Asia Minor. Of late years the number of cases of echinococcus cyst of the lung which have come to light has increased because of the more extensive use of the X-ray in the study of chest conditions. The disease is usually unilateral. In

most cases it is on the right side and at the periphery of the middle portion of the lung.

*Hydrothorax* of the lung may be closed or open. The open cyst is one that has ruptured into a bronchus or lung tissue. Expulsion of part or all of the contents of the cyst may occur. Membrane vesicles and scoli are have been found in the expectorated material. The contents of the cyst may be clear or purulent fluid. A common sign is bloody sputum or hemorrhage.

The course of the disease is chronic. Spontaneous cure is very rare. The symptoms may simulate those of almost any pulmonary infection. Not until the cyst ruptures or the lung becomes inflamed will the patient become conscious of any trouble. Emphysema is rarely present. The complement fixation test, when positive, is confirmatory but when negative does not rule out the condition. Exploratory puncture of the cyst is inadvisable because of the serious sequelae which may follow its rupture.

The author reports two cases. The second was treated with the X-ray but there was no improvement or change in the X-ray signs. Whenever possible, the disease should be treated surgically.

RALPH B. BETHUNE, M.D.

Hedinger E. Fatal Congestive Hemorrhages in the Lung and the Central Nervous System Due to Momentary Bodily Exertion and Their Relationship to Perthes' Pressure Congestion (Über tödliche Stauungsblutungen in den Lungen und im Zentralnervengewebe bei momentaner starker körperlicher Anstrengung und ihre Beziehung zur Perthes'schen Druckstauung). *Schweizer med. Wochenschr.* 9, 1, 14, 833.

A case is reported in which popliteal of the lung with hemorrhages in the brain and spinal cord was caused by momentary overexertion. The clinical course and the autopsy findings indicated hemorrhage due to active congestion in contrast to the hemorrhage of Perthes which is due to passive congestion caused by compression of the trunk.

DISCUSSION (2)

## HEART AND VASCULAR SYSTEM

Meth, V. Cervical Sympathectomy as Means of Stopping the Pain of Angina Pectoris. *Am. J. Surg.* 9, 2274, 300.

Jonasson removes the left cervical sympathetic nerve and is anxious to relieve the pain of angina pectoris. In the four cases in which the author performed this operation the pain ceased immediately. Meth has used the same treatment also in cases of trifacial neuralgia and has seen no ill effects. Unmistakable to it provided preliminary hypodermic injection of atropine sulphate was given about half an hour before the operation and traction on the nerves was avoided. In several cases of bilateral facial neuralgia he operated on both sides of the neck.

The temporary application of Crile clamp to the common or the external carotid artery greatly

facilitates the operation by keeping the facial bloodless.

Meth concludes that the cutting of the sympathetic nerve causes a vasoparalysis with subsequent vasodilation which permanently floods the painful anemic parts with blood.

The operation is not regarded as a cure for the underlying disease causing the angina pectoris, being recommended merely to relieve the pain. The suppression of the paroxysms of pain does away with the usual cause of sudden death in cases of aortitis as it affects mainly the origin of the vessel where the network of nerves is especially dense and the pain is exceptionally severe.

WALTER C. BARKER, M.D.

## PHARYNX AND ESOPHAGUS

Steiner O. Multiple Cancer Formation. Carcinoma of the Vallecula Epiglottica and of the Esophagus (Zur Kasuistik multipler Krebsbildung. Carcinoma der Vallecula epiglottica und des Esophagus). *Verh. Klin. 9. Sym.* 449.

The author reports two cases of carcinoma involving that of the pharynx (vallecula) and the esophagus in which the tumors were separated by a wide stretch of healthy tissue.

**CASE 1.** A tumor of the vallecula (the size of half nut) was shown by biopsy to be cancerous. After ligation of the basilar artery the growth and glands were extirpated under conduction anesthesia by splitting the cheek and reflecting the lower lip upward. Death occurred on the sixth day from pneumonia. Autopsy revealed a carcinoma of similar histologic structure in the lower third of the esophagus. Except for an occasional sticking pain over the lower portion of the sternum, there were no signs of an esophageal tumor during life.

**CASE 2.** A carcinoma of the esophagus was diagnosed by the use of bougie (the X-ray) and esophagoscope. At the same time a tumor of the vallecula was found by laryngoscopy. Biopsy showed that the tumors were carcinomas of similar histologic structure. Clinically there were no symptoms attributable to the tumor of the vallecula, the condition being diagnosed only on laryngoscopic examination.

Only one case of multiple primary carcinoma of the pharynx (tongue) and the esophagus is reported in the literature. Metastatic formations do not occur very often in carcinoma of the esophagus as compared with carcinomas of other parts. True metastases in the esophagus or the pharynx with carcinoma of other organs has not been described. Secondary involvement of the esophagus or the pharynx by the spreading of carcinoma from one to the other is more frequent. Primary carcinoma of the pharynx is not very rare. Inoculation metastases from operation have been reported.

The relationship to each other of the carcinomas of the esophagus and the pharynx in the cases observed cannot be determined. It is probable, however that in both cases the carcinoma of the

esophagus was the primary lesion and the carcinoma of the pharynx a metastasis.

Radical operation for a carcinoma at the base of the tongue or of the pharynx should be done only

after it has been determined by careful examination (sounding, roentgenography and particularly esophagoscopy) that the esophagus is not affected by carcinoma.

Sovero (2)

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

Moschowitz, A. V. The Anatomy and Identity of "Encysted" and "Infantile" Hernia. *Surg. Gynec. & Obst.* 9: 237, 1917.

They first described infantile hernia several years before Cooper's first account of encysted hernia. The author regards the nomenclature as arbitrary.

All abnormalities of the hernial can be traced to fault closure of the processus vaginalis. In its descent into the scrotum the testis is accompanied by the processus vaginalis peritonei. After the complete descent of the testis the vaginal process becomes shut off at the abdominal end and just

the hernia into the funicular process the vaginal process has become shut off at its testicular end but not also at this point. The tunica vaginalis testis is normal. When abdominal contents pass through the open abdominal end of the vaginal process a hernia results. This form should be called "hernia into the supratal testicular vaginal process." It is characterized by a very thin sac and the absence of the slender cord of the obliterated vaginal process.

In encysted hernia the vaginal process has become shut off at the abdominal or proximal end but not elsewhere. If hernia forms it descends in front of the cord and vaginal process. If the vaginal process contains a exudate and hernia forms, the

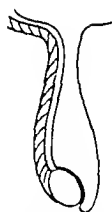


Fig. 1 Congenital hernia

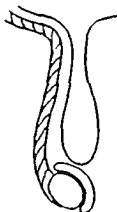


Fig. 2 Hernia into the funicular process

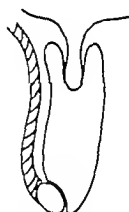


Fig. 3 Encysted hernia

above the testis while the intervening portion becomes obliterated to a fine cord-like structure within the confines of the spermatic cord, and the distal part persists as the tunica vaginalis testis.

The closure of the vaginal process does not follow any set rule.

In congenital inguinal hernia the processus vaginalis has failed to close at both the testicular and the abdominal ends and forms a sac into which some unusual effort will force abdominal contents and thus form complete scrotal hernia. The author believes that hernia into the vaginal process could be a better name for this condition. This hernia is characterized chiefly by the presence of the testicle within the hernial sac and by the exceeding thinness of the sac.

sac bulges into the closed off vaginal process and produces the so-called encysted hernia. At operation the surgeon may open the vaginal process by incision for the sac and will be surprised to find no communication with the general peritoneal cavity. The true sac protrudes on the posterior wall of the sac of the vaginal process. This form is differentiated from simple inguinal hernia associated with ordinary hydrocele of the tunica vaginalis testis by the ease or difficulty with which the hernial sac can be separated from the hydrocele sac. In encysted hernia they are densely adherent to one another and cannot be separated.

In infantile hernia the maldevelopment is practically identical with that of encysted hernia but instead of becoming invaginated in the pro-



formed sac, the hernial protrusion descends behind the sac. In the author's opinion there is no material difference between these two forms of hernia.

WALTER C. BURKET, M.D.

Capps, J. A. and Coleman, G. H. Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum. *Arch Int Med* 912, xxx 376.

The authors' knowledge of sensation in the abdomen and its viscera is based largely on the careful and ingenious observations of other investigators. It is agreed that the hollow viscera and omentum give no sensation response to heat or cold or cutting or clamping.

One investigator found that the parietal peritoneum is sensitive to irritation especially when inflammation is present and from his experiments concluded that all visceral pain is the result of inflammation and traction on the parietal peritoneum. Another investigator has furnished convincing proof of true visceral pain (splerochae) induced by tension of the hollow organs, and in addition that the somatic pain originating in a sensitization of the posterior spinal roots and a radiation of painful sensations along the course of the corresponding spinal nerves to the skin and deeper tissue layers.

The peritoneal membrane lining the abdominal wall has received less attention from experimenters than the viscera, while the peritoneum covering the under surface of the diaphragm has remained almost terra incognita to surgical explorers who have been interested in charting areas of sensation by direct experimental methods.

The chief purpose of the studies reported in this article was to determine the localization of pain due to stimulation of the parietal and diaphragmatic peritoneum. The authors' experiments were carried out by a method previously employed by one of them in the study of sensation in the pleural cavity. After partial anaesthetization of the skin, an ethyl chloride trocar was inserted through the abdominal wall until the end moved about freely. The point was then withdrawn and through the cannula a long silver wire, one end of which was beaded and smooth and the other relatively sharp.

As passed both ends are slightly curved in order that they might be brought more easily into contact with the abdominal wall. In the earlier experiments patients with ascites were chosen because the fluid distended the wall and facilitated exploration. Recently however air has been injected, a method which has proven harmless.

The results of the experiments are summarized as follows:

The parietal peritoneum and its underlying areolae, so far as explored, namely all the anterior median areas and the lateral areas as far as the anterior superior spines are sensitive to pain from the strong pressure of a smooth point or the light pressure or lateral movement of a rough point of wire.

2. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than 10°.

3. The observations confirm the conclusion of Ramstedt and Lennander that the parietal peritoneum is devoid of pressure sense.

4. The peritoneum covering the diaphragm is devoid of the sense of pressure as applied by light contact or stroking with a beaded wire point, but is acutely sensitive to strong pressure with beaded point and to light contact with a rough point.

5. The location of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion causes pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord of the fourth cervical segment. The pain has not been noted along the course of the phrenic nerve itself. (Continued on next page)

## GASTRO-INTESTINAL TRACT

Wilson, R. T. Peptic Ulcer. *J. Radiol.* 1922, 25, 524.

The records of 344 patients examined roentgenologically for gastro-intestinal disturbances or symptoms or signs referable to pathology of the digestion system were studied. In 363 cases the roentgen diagnoses as peptic ulcer. In 36 of these the lesion was believed to be gastric ulcer and in 37 duodenal ulcer. One hundred and eleven of these cases came to operation and in 13 of them the X-ray diagnosis was confirmed. Among the 248 cases in which the diagnosis was negative there were 61 in which peptic ulcer was found at laparotomy.

As a result of these studies the author is convinced that such indirect signs as variations in peristalsis and retention beyond the usual limits are of doubtful value in the diagnosis of peptic ulcer. It regards deformity as the one satisfying positive sign. More reliance is to be placed upon the fluoroscopic examination than upon roentgenograms. The latter are of value only as a record, for confirmation or for demonstration. In no case was lesion demonstrated roentgenographically that had not been seen previously on the fluoroscopic screen.

ANDREW HARRIS, M.D.

Finckh, M. Peptic Ulcer. (1) Deformities of the Viscera. (2) Induced by the X-Ray. (3) Changes for the Better by Treatment. *Arch Int Med* 9, 11 63.

As it is claimed by some surgeons that the true chronic gastric ulcer evidenced by typical clinical and roentgen findings can be cured only by surgical treatment, the author presents twelve cases of peptic ulcer in which the results demonstrate sig-

equivocally the success of medical treatment. In all of these cases constant deformities were seen on roentgen examination. Five also had a typical penetrating (callous) ulcer of the lesser curvature, one a penetrating ulcer of the pylorus and six, constant deformities of the cap. These twelve cases were treated by duodenal alimentation. Subsequent roentgen examinations revealed normal configuration of the stomach and duodenum. There was also a return of general well-being.

A few of these cases are reported in detail but the histories of the rest are given in table form. Roentgenograms and outline sketches of the deformities before and after treatment are included in the article.

On the basis of his experience the author concludes that as a general rule most varieties of peptic ulcer, even the graver forms, are amenable to medical treatment. Duodenal alimentation was applied in his cases as a good method of resting the affected part and giving it ample nutrition. Einhorn does not doubt that similar results may be obtained by other methods of treatment, but claims that their methods take somewhat longer to effect a cure.

APOLINA HARTONO, M.D.

Hammer A. W. Cancer of the Stomach. *J. Amer. Med. Assoc.* 922 1914, 634.

More than 30 per cent of all cancers in civilized men are found in the stomach. Heat is considered by many a predisposing cause. Locomotive engineers whose skins are for years exposed to the heat from the fire box of the engine develop cancer of the legs. Australians develop cancer of the face which originates from heat irritation. Chinese men who eat their rice extremely hot have cancer of the throat and esophagus, while their wives, who eat later and usually of colder rice do not have this cancer.

The percentage of cancers of the stomach originating in ulcers is given variously. One author says 3 per cent, May, Robson says 30 per cent and the Mayo Clinic, 60 per cent.

Hammer mentions five types of operation done for gastric cancer but discusses gastrectomy primarily. For successful outcome it is necessary that gastrectomy be done before there is extensive lymphatic involvement, before extensive adhesions have formed and before secondary growths have developed. Total removal of the stomach is in no way incompatible with good health and long life. Mayo is quoted as reporting nine operations in which the entire stomach was removed, only enough of the gastric tissue being left for anastomosis. Of 65 patients subjected to resection of the stomach one lived fifteen years after the operation and sixty-two lived five years or longer.

May, Robson says, I cannot help feeling that far too gloomy a view is taken of cancer of the stomach for if the disease is caught early and wide excision is performed, care being taken to remove the lymphatic area of the stomach with the glands along

the lesser curvature, results of a most favorable nature will award our endeavor.

The roentgen ray is of the greatest value in the diagnosis. In 95 per cent of cases of gastric carcinoma the ray will show the condition before the development of appreciable symptoms. A persisting anemia calls for such an examination.

P. W. SWERD, M.D.

Cromarty R. F. Some Observations on the Surgery of Duodenal Membranes, with Call-In Report of the Results of Treatment. *Canadian Med. Assoc. J.* 923 125, 876.

Duodenal membranes were removed in forty cases operated upon at the Bigelow Clinic in the last two and one-half years. Such membranes vary from sheets closely overlying the duodenum and fixed at the omental and mesocolic attachments to dense cord-like bars spreading out over the duodenum from the liver or colon. Those of the latter type cause distinct constriction, while those of the former type produce longitudinal puckering of the duodenal wall and interfere with its muscular function.

Duodenal membranes are frequently present in cholecystitis, but may or may not be attached to the gall-bladder.

A study of many cases demonstrates that these membranes cause very definite symptoms. In order of frequency, those most common in cases operated upon are (1) gnawing or cramping pain in the epigastrium in 75 per cent, (2) tenderness in the epigastrium in 50 per cent, (3) eructations of gas in 50 per cent and (4) nausea or vomiting in 45 per cent. Seventy per cent of the patients have hyperacidity of the gastric contents. The condition differs from duodenal ulcer in that the pain is persistent, pallid and gnawing and may be made worse by the ingestion of food, jarring and lifting. Tenderness is usually persistent. Cholecystitis is differentiated by the location of the pain and the tender point on the skin.

The final diagnosis has been made on the basis of the fluoroscopic findings which vary with the site of the membrane. The duodenal cap may appear to have been sheared off on one surface and will not fill properly. The filling defect is frequently smooth and regular without the acute indentations found in ulcer. The cap may be spastic and fill only under much pressure. The cap and the first part of the duodenum may be drawn vertically upward out of the normal location. The second part of the duodenum may be drawn upward and to the right. The findings show mechanical interference.

Some cases have been diagnosed first as neurous or chronic appendicitis with reflex gastric spasm. Medical treatment does not give relief.

In the author's opinion the membranes are usually due to inflammation probably inflammation of the gall bladder or that due to duodenal ulcer or local used pentonitis.

Surgical treatment necessitates free exposure of the duodenum. Fibrous or cord-like membranes

are cut parallel to the duodenum through vascular parts, trimmed, and then allowed to retract after ligation of the bleeding points. Membranes closely applied to the duodenum must be elevated and cut without damaging the peritoneal coat. The duodenum is in no way loosened from its attachments. After all the membranes have been removed the surface of the duodenum is covered with sterile vaseline.

The results in the cases operated upon as determined by a questionnaire showed: (1) symptoms as a whole much improved, 80 per cent, slightly improved, 55 per cent; (2) epigastric pain present in 6 per cent, cured, 33 per cent, relieved, 53 per cent; (3) belching of gas present in 60 per cent, improved, 55 per cent; (4) epigastric tenderness present in 30 per cent, cured in 47 per cent, relieved in 50 per cent; and (5) nausea and vomiting present in 50 per cent, relieved in 80 per cent. In the absence of epigastric pain and tenderness, surgical removal of the duodenal membranes gave the poorest results.

The author concludes that this syndrome, together with the fluoroscopic findings, establishes the entity of duodenal membranes, and that surgical measures are justified. WALKER C. BURKET, M.D.

Jewsbury R. C. Two Cases of Duodenal Obstruction in Infants. *Proc Roy Soc Med Lond* 1924 ser A, Sect Med Child 10.

**CASE 1.** Congenital stenosis of the duodenum. A full term female child, who was apparently normal at birth, began to have attacks of projectile vomiting of bile-stained material on the third day. These attacks occurred two or three times a day about one hour after feedings, with the exception of the thirteenth, fourteenth, and fifteenth days. On its admission to the hospital on the sixteenth day the child was emaciated, weighing only 4 lbs. 9 oz. The legs were drawn up, and there was marked peristalsis from left to right every half to one minute. A rounded swelling extended from the left costal margin downward to below the umbilicus and to the right costal margin where a small indefinite mass was felt. X-ray examination demonstrated a greatly distended stomach and dilation of the first and second portions of the duodenum. Very little food had passed after 14 hours. The child had small infrequent bowel movements, continued to vomit after feedings, and died on the twenty-ninth day.

Postmortem examination showed the stomach to be grossly hypertrophied. The pylorus was not thickened, but the pyloric lumen was larger than normal. The first and second parts of the duodenum were dilated and the duodenal walls thickened because of obstruction due to marked constriction in the third part. There was no evidence of external compression.

**CASE 2.** Congenital obstruction of the bowel at the duodenojejunal juncture. The patient was wasted, slightly jaundiced male child, aged 9 days, who had had attacks of projectile vomiting of bile stained material since he was 3 days old. The stomach was dilated and showed peristalsis from left

to right. The stools were intermediate between meconium and a milk stool. After taking 100 of breast milk the child became uncomfortable and vomited a larger quantity of fluid than he had ingested. Roentgen-ray examination after a barium meal showed retention of most of the meal for sixteen hours. Constriction of the first and second parts of the duodenum was suggested. The child vomited after every feeding and died on the thirteenth day.

A autopsy revealed a markedly dilated and hypertrophied stomach and duodenum. Below the duodenojejunal juncture the bowel was very small and shrunken. The cecum was abnormally large under the liver. Obstruction in the duodenum was caused by pressure from external structures, particularly the right coeliac artery. There was no abnormal narrowing of the duodenum itself.

A helpful factor in the differential diagnosis between pyloric and duodenal obstruction is the bile-stained vomitus which appears in duodenal obstruction. Thompson has seen three cases of pyloric stenosis, confirmed by postmortem examination, in which the vomitus contained bile. Marked visible peristalsis occurs much later in pyloric stenosis than in duodenal obstruction.

The author believes that gastrojejunostomy is the operation of choice if the patient is seen early, the diagnosis is correctly made, and the child is strong enough to withstand surgical treatment.

The author quotes Crile's summary of the characteristics of duodenal stenosis. Vomiting with the usual signs of obstruction is the characteristic feature and may occur from distention due to normal secretion without the ingestion of food. In 50 per cent of the cases the vomitus is bile stained. Hiccups, tenderness is not uncommon. Inattention, wasting, and constipation are marked. Dilation and hypertrophy of the stomach and the first part of the duodenum are associated with marked gastric peristalsis. Many of the cases are those of premature infants.

WALKER C. BURKET, M.D.

Kleinwachmidt P. The Treatment of Carcinoma of the Papilla of Vater. (*Zur Behandlung des Carcinoms der Papilla Vateri.*) *Deutsche med Wochenschr* 1922 xivm 7.

Five cases of obstruction of the common bile duct by tumor at the papilla of Vater are reported. In both the diagnosis of neoplasms is made after incision of the anterior wall of the duodenum and circumcision of the papilla.

The localization of tumor in the common bile duct can be established only after exposure. The reticall, the best method of operation is resection of the duodenum from the pylorus up to the inferior horizontal portion. From the practical standpoint, however, this is applicable only rarely as the patient condition is usually poor and the surgeon must confine himself to excision of the tumor. The only permanent cure reported is due to excision.

CASE (2)

Lane, W. A., Waugh, G., Gray H. M. W., Pater-  
son, H. J. and Walton, A. J. The Treatment  
of Non Inflammatory Affections of the Colon. *Brit*  
*Med J* 1922, 4

#### SIR W. ARBUTHNOT LANE

All abnormal conditions of the colon are direct or indirect results of intestinal stasis. There are two groups: those in which reaction is present, and those in which reaction is absent.

Stagnation of the intestinal contents in the pelvic colon causes the formation of bands on the under surface of the mesentery supporting the juncture of the iliac and pelvic colon. These bands soon develop into distinct membranes, the first and last link, which gradually contract, fixing the colon in the iliac fossa and diminishing its lumen by angulating it and rotating it on its long axis. The fallopian tube and ovary may also become fixed by this membrane, a condition which may result in extra-uterine pregnancy, teratoma, cystic disease of the ovary and particularly in pain on the left side at the menstrual period due to the passage of intestinal contents through an obstructed bowel over an engorged ovary. Persistent obstruction at the ileocolic juncture of the colon makes this point a common site of cancer and the colon proximal to it a common site of diverticulitis.

The increased blood in the obstructed bowel causes the formation of similar membranes remaining for the peritoneum where it passes from the abdominal wall to the convex surface of the bowel—immediately above the iliac crests, at the splenic flexure, below the gall bladder over the outer surface of the caecum (Jackson's membrane) and on the under surface of the terminal mesentery of the ileum (Lane's link). These bands represent the effort of the organism to contract an abnormal holding up of the bowel due to distal obstruction. That they are not congenital is indicated by their absence in fifty newborn fetuses examined by Chapple at Guy Hospital. The controlling peristalsis is another result of strain exerted by loaded caecum, the appendix becoming fixed by adhesions to the undersurface of the mesentery. When the ileum and caecum drop into the pelvis, the ileum is kinked sharply over the fixed appendix and more or less occlusion results.

The second type of intestinal stasis is characterized by entire absence of tendency to form limiting bands and membranes. The pelvic colon becomes greatly elongated, tortuous and flaccid by reason of the attempts of the organism to expel its contents. Because of the obstruction of the lower bowel, the proximal colon becomes elongated and prolapsed so that it may twist and obstruct the end of the ileum. The latter condition may be benefited by phlebotomy of the bowel or anchoring it by Waugh's method. The retroaction to the passage of intestinal contents resulting from elongation of the pelvic colon results in colitis, spastic contraction of the muscle wall, and still further mechanical obstruction. Since there is no definite point of obstruction,

cancer does not commonly develop from this type of intestinal stasis.

The operative treatment of the first type of stasis is resection of the bands which form the first and last link, followed by careful peritonization of all raw surfaces. Other bands, if present, should be divided. If the membrane forming the ileal link is extensive a drainage tube is left in position because of the presence of septic organisms in the divided ileal ends of the membrane. If diverticulitis is present, the divided end of the ileum is joined to the pelvic colon. Occasionally the diseased area is resected and the proximal bowel joined to the pelvic colon. If tuberculous ulceration is present, colectomy is performed or the ileum is joined to the pelvic colon and only the affected area is resected.

In the second type the best results are obtained by colectomy or by anastomosis of the ileum to the pelvic colon. If volvulus is present it is possible to resect the volvulus or to perform colectomy. The same treatment applies to megacolon. If medical treatment fails to cure ulcerative mucous and membranous colitis, colectomy is the only operation of value. For the first condition prolonged local and vaccine treatment is necessary in addition.

#### GEORGE WAUGH

The colon, subject as it is to constant accretions of intestinal contents, must be perfect in its development so as to withstand the strain which gravity imposes upon it. Imperfect development of the colon, omentum, biliary apparatus, and small intestine must be carefully studied in order to understand and correct functional disabilities of the alimentary tract.

In children under years of age examined post mortem by Stallman at the Hospital for Sick Children, the following structural variations were found: in thirty-eight, the youngest of whom was a month old, there was a complete primæ mesentery to the ascending colon; in nine, the youngest a month old, a long primitive mesentery to the iliac and pelvic colon; in fourteen, the youngest a month old, Lane's parietocolic membrane; and in forty-five a central mesentery to the gall-bladder. In one the caecum was under the liver.

In every one of 88 adults and twenty-two children operated upon since December 1919, the ascending colon had retained a primitive mesentery. In 77 cases the entire ascending colon could be lifted out of the abdomen and placed upon towels to the left of the midline; in thirty-three it was bound down strongly at the midpoint, the primitive mesocolon penetrating in variable degree above and below this point. This fixation, as caused by an opaque, non-vascular band passing from the antero-external surface of the ascending colon to the parietal wall. When the band was cut the cellular tissue covering the quadratus lumborum was exposed. It had no features in common with Jackson's membrane, being the structure described by Lane in 1903 as the parietocolic membrane.

In 1 case of the operathy, versus the entire colon lay in the left iliac fossa and the left side of the pelvis, and retained a primitive dorsal mesentery throughout its length. In five cases the caecum lay under the liver, in three of these the colon passed directly to the left from the caecum and the omentum arose from the entire horizontal loop. In the other 1 the colon dropped abruptly so that the hepatic flexure lay in the pelvis. In these 6 cases the terminal ileum made a steep vertical ascent to reach the caecum and was retroperitoneal in this portion of its course. In 10 cases the colon was completely rotated, but had dragged with it an opaque membrane which covered all the remaining morra except the stomach.

In 18 cases the transverse colon lay at or below the sacral promontory. The degree of associated prolapse of the stomach as variable depending upon variations in attachment and the length of the omentum. Prolapse of the stomach without prolapse of the colon was never seen.

With these variations of position and mobility the colon showed atrophy and distention which involved the ascending portion in every case; the right half of the transverse colon in ninety-eight cases, and the entire transverse colon in thirty cases. Similar changes were found in parts of the descending colon.

In 18 cases, all those of persons under 30 years of age, the entire colon was trophic and dilated from the caecum to the rectum.

In the majority of these cases the initial symptoms appeared between the ages of 18 and 25, and consisted of persistent discomfort in the upper half of the abdomen, which gradually in the course of a year, merged into pain generally noted in the upper half of the abdomen, but subject to variations in distribution, location, and character. In ninety-seven cases there was a hunger pain, which frequently could be relieved by the assumption of the horizontal position and the ingestion of food.

This fact, taken in conjunction with the fact that the hunger pain appeared constantly at 4 o'clock in the afternoon and in the early hours of the morning,

time at which the ascending colon is filled with food, suggests very strongly that the pain is caused by the downward pull of the loaded colon on its mesentery. The relief from pain afforded by fixation of the colon further confirms this view.

None of these patients had duodenal ulcers, which could be found in operation. All had lost eight to twenty pounds; eight cases had constipation preceded the other troubles, and in most of them its appearance was delayed for four or five years after the beginning of the trouble.

In forty cases the appendix had been removed; in five the gall bladder had been drained, and in nine a gastrojejunostomy had been performed.

The operative procedures turned out in these cases were as follows:

In all of them the ascending colon was fixed to the posterior abdominal wall in the normal position.

The trophic right half of the transverse colon was fixed by Coffey's method in 18; the ventral mesentery of the gall bladder found in twenty-seven cases was cut away; the gastrojejunostomy anastomosis was undone in six. The appendix, still present in 164 cases, was removed. In four of these it was obviously diseased. A total colectomy or a short-circuiting operation as never done. The operative mortality (including 30 cases previously reported) was less than 1 per cent.

Late complications included eight cases of intestinal obstruction due to adhesions, which were observed during the past seven years. In six of these a knuckle of small bowel was adherent to the under surface of the laparotomy wound, and in two the omentum was adherent to the pelvis.

The result can be grouped roughly as failures, saprophytic, and apparent cures. Twenty patients report they are no better. A second group, though not entirely free from their old symptoms, have been materially benefited. Ninety-eight, after periods ranging from eight to five years, are entirely cured. The rate of improvement has been slow in some and abrupt in others.

The essential principle involved in this treatment is that in many cases functional disability of the gastro-intestinal tract is due to congenital structural defects which finally reveal their presence by failure of function. The removal of these defects and the substitution of a normal functional condition affords the essential condition for cure.

#### SIX H M W GRAY

Since the first part of the colon sets the pace for the rest of it, adhesions and bands about the caecum and ascending colon are of primary importance. That peritoneal adhesions are formed in the process of development is indicated by the work of Bryant, who found bands such as are described by Lane in all of the male fetuses and in 87.5 per cent of the female fetuses he examined.

As the caecum descends from the subhepatic region in the course of normal development, the long mesentery in which the terminal ileum and ascending colon are originally provided, becomes fixed with the peritoneum of the posterior abdominal wall. If delay in the descent of the caecum occurs, the ileum having already taken place, may interfere with the descent. The resulting abnormality—whether it is a stretched out band, Lane's terminal ileal membrane, membrane reaching the antimesenteric border of the ileum and rotating it on its long axis, or simply a member of fibrous tags—represents the balance between the downward pull of the caecum and the tendency of the ileum to remain fixed.

The chief cause of non-descent of the caecum is involved in an abnormally developed right margin of omentum. If the caecum overcomes the obstruction, the affected part of the omentum is drawn out into Jackson's membrane. Usually this membrane can be traced below and internal to the anterior longitudinal band. In the adult it does not

often reach the caecum. Above, it is attached to the posterior abdominal wall below the liver occasionally to the under-surface of the liver external to the gall-bladder and to the adjacent anterior abdominal wall as well. It varies greatly in obliquity, length, and thickness.

If the descent of the caecum is retarded by omental adhesions, the appendix usually comes to lie in a retrocolic or retrocaecal position, external to the caecum. If the appendix lies internal to the caecum it may become involved in the obliteration of the terminal mesentery of the ileum. This is the origin of the type described by Lane as the "controlling appendix."

Gray's experience differs from that of Welch as Gray does not often discover a true ascending mesocolon, but finds that a more or less definite Jackson membrane is constantly present. The boomerang drag of the caecum and colon upon the right margin of the omentum causing a potential constriction of the pylorus and duodenum may account for the symptoms referred to the right upper quadrant in these cases.

By consistently securing an adequate exposure performing laparotomy Gray finds abnormalities in one or more parts of the colon in the majority of his cases. On the other hand, in apparently normal colon, as outlined by X-ray examination, is frequently present in patients suffering from chronic constipation. The latter is due in Gray's opinion, to lesions of the upper part of the gastro-intestinal tract more frequently than to disease of the colon.

The symptoms ascribed by Welch to the drag of a heavily laden colon, and frequently assigned to the stomach, duodenum and gall bladder often appear within a few years after the patient has begun to lead a sedentary life. They begin with loss of tone of the abdominal muscles, which is doubtless shared by the musculature of the alimentary canal. A large number of patients in these symptoms can be helped by operation.

The conditions commonly found at operation in such cases are the absence of disease of the gall bladder, duodenum, and appendix, and the presence of peritoneal bands such as those just described, with a mobile dilated, hypertrophied caecum and ascending colon and pathologic appendix. It is not sufficient to remove the appendix and divide the peritoneal bands. The caecum and colon must be fixed in normal position, as is advocated by Wilson in 1908. If the patient condition permits, this is now done in the course of laparotomy in every case of mobile caecum and ascending colon.

In performing this operation the filmy tissue behind the colon should be removed so that the colon may form firm adhesions to the posterior abdominal wall. The hepatic flexure should not be unduly kinked by the upper sutures. The caecum and colon are usually plicated in longitudinal direction by catching the anterior and external longitudinal bands in the fixation sutures so as to narrow the circumference of the bowel.

#### H. J. PATERSON

In many cases of intestinal taxis the symptoms are mainly gastric—distention flatulence pain after eating, occasional vomiting, absence of free hydrochloric acid. Relief of the stasis by a short-circuiting operation is followed by symptomatic improvement and the return of the secretion of free hydrochloric acid.

The charcoal test is of also in determining high cases of intestinal stasis should be operated upon. In the absence of definite evidence of a kink or a diseased appendix, operation is not indicated unless the appearance of charcoal taken by mouth is delayed for four days. Deductions drawn from roentgenological and bacteriological examinations should not be allowed to outweigh the evidence afforded by this simple clinical determination.

If there is definite evidence of kinks or obstruction surgical treatment is indicated, but if the stasis is due to atony of the large bowel or the presence of large mobile caecum it can usually be corrected by medical and mechanical treatment. The division of bands is a satisfactory operation unless the bands are very extensive. In the latter case, because of the danger of postoperative ileus, colonic exclusion is preferable. Ileocegmoidostomy is an unsatisfactory operation because of the accumulation of faeces in the inactive transverse and ascending colon. In twenty of forty-one cases it was necessary to perform a second operation to remove the colon above the ileocegmoid anastomosis. The results of partial colectomy as far as the relief of symptoms is concerned, are excellent, but in six of thirty-seven cases a second operation was necessary later for the relief of intestinal obstruction. Paterson has never performed a primary colectomy but of the twenty patients on whom colectomy was performed secondary to ileocegmoidostomy six developed intestinal obstruction. Because of the danger of this complication, total colectomy is contra-indicated in the treatment of intestinal stasis. With regard to the value of fixation of the ascending colon Paterson is skeptical.

The operation of colonic exclusion is performed as follows:

The ileum is crushed and divided with the cautery 4 to 6 in. from the ileocecal valve and the ligated distal end inverted with a potentiating suture. The proximal ileum is then joined to the side of the sigmoid, and the stump of ileum distal to the anastomosis is inverted so as not to leave a blind pouch. The sigmoid is divided in the same way 1 in. above the anastomosis. The closed tube left behind, consisting of the caecum and the ascending, transverse and descending colon, is drained by bringing the appendix or caecum to the abdominal wall and tying a large catheter in the caecum.

Of nineteen cases in which this operation was performed the results were excellent in sixteen. One patient died sixteen days after the operation from suppuration in the right iliac fossa, one died eighteen months after the operation from perfora-

tion of a tension ulcer and one has had attack of p... from time to time due to distention of the cecum with gas.

The operation has all the advantages of colectomy without the danger of later intestinal obstruction.

#### A. J. WALTON

Hinks and blind are not so common as has been suggested. They are usually congenital and may be found in very young children. Symptoms of chronic toxemia appear chiefly in women but the hinks and membrane described are equally common in males and females. Plots do not peculiarly reside in women who have had frequent pregnancies and to how profound degree of plots do not have symptoms of toxemia. The explanation of the increasing frequency of cecopthysis in young women today may lie in the lack of development of the involuntary muscles.

Stasis is medical disease. Operation should be performed only if medical treatment has failed. Local reliefs only in very few cases. Stasis is not relieved by removal of the appendix or by removal of the cecum.

See also L. K. M. D.

Richter, J. Atypical Operative—Especially half subtotal resection (resection of the tip of the appendix). Causes of severe adhesions. Don't Appendectomy (Lieber). Operative. Inoperable cases fall into two main classes. (1) A situation of the appendix near the cecum but anterior adhesions may cause appendicitis. Deutsche Zeitschrift für Chirurgie 61: 1-4.

In a case of severe electrical adhesions between the appendix and small intestine and between the small intestine and the pelvis, the thoracic and nearly complete separation of the appendix from the lateral adhesions in secondary operation. As further separation toward the tip is impossible because of the fixation of the small intestine, the tip was left adherent to the small intestine, bound bloodily to its proximal end and with the starbed wall of small intestine dragged into the lumen of the gut. The severely distended part of appendix was removed and the tamponade of the small intestine.

Although there has been much criticism of Hofmann's procedure in dealing with severe cases of adhesions, the entire appendix, after being excluded, left in the abdominal cavity, the cecum and proximal end of the appendix being covered by omentum. Richter believes his technique. It is indicated only as a last resort after other measures have failed, offers relatively good protection from recurrence.

Thorne (7)

Carter, R. F.: The Pre-Operative and Postoperative Treatment for Colon Malignancy. J. Am. Med. Assoc. 1934, 10: 2.

Co-operation of the surgeon, the internist, the bacteriologist and the physiologist is essential for success in operation on the colon for malignancy.

Complete obstruction of the colon by a growth must be relieved at once by operation regardless of

the patient's general condition. A growth at the ileocecal junction may cause symptoms of obstruction early but a growth in the right half of the large bowel may attain considerable size and form metastases before it produces symptoms, even so the contents of the part of the colon as liquid or semoliquid Cathartid and irrigation will clean the large bowel satisfactorily for one stage operation.

Clearing of the bowel proximal to growth in the left half of the colon is much more difficult problem and can be accomplished only by establishing an artificial anus proximal to the growth for external drainage and irrigation. As the lumen of the bowel increases, the flow of contents becomes hindered, the absorption of the liquid becomes greater and hard masses of feces are formed which

will not pass the obstruction and result in forms of purgation. The complete removal of these anahs and the lessening of the absorption of septic material is the most important step in the preparation for removal of the growth.

If this should never be drastic and should precede preliminary operation in the presence of partial obstruction or attempted during the last thirty to forty hours before operation. It should produce spasm of the colon during the operation, painful contraction afterward, and dehydration.

The portion of the bowel distal to the growth is first cleaned by injecting 6 to 8 oz of oil followed in eight hours by soap and enema given until the return is clear. A narrow bougienage or enema is then given on repeated days until four hours prior to the operation.

In normal colon the influence of the bacteria dominates. The contents become more solid in the presence of an obstructing growth the entire colon proximal to the growth becomes a suitable breeding ground for virulent bacteria. Drainage of the colon proximal to the growth is therefore essential to decrease the sepsis of the bowel contents. If this cannot be accomplished through the rectum, an artificial anus should be established.

After the operation a diet of morphine followed by 30 cc. of enemata every forty-eight hours will control the pain. Continued colicky pain after the first is not relieved by the colon tube, strongly suggests intestinal obstruction. Evidence of the anastomosis of normal bowel may sometimes cause sufficient stenosis to produce painful peristalsis. This should disappear in forty-eight hours. If the proximal colon has been divided, external drainage through a colostomy or enterostomy opening is indicated at the time the resection is done.

In ascending retroperitoneal resection causes no pain, but pain in the second or third day after the operation suggests wound infection and clapping, slough or infection. Relief of pain by excision may be relieved by the application of petrolatum to the wound area.

The administration of fluid is the most important postoperative consideration and should be begun immediately following operation by hypodermoclysis.

us with a 3 per cent glucose solution given under the breast or in the flank. It may thus be given slowly over a long period of time. Four ounces of fluid may be injected into the rectum with safety every four hours if the injection is preceded by the passage of a colon tube. Glucose and sodium bicarbonate should not be given intravenously unless a chemical analysis of the blood is first made. When a blood analysis is not made, normal saline should be used.

vomiting after ten hours is due to acute dilatation of the stomach (which is rare) neurosis, acidosis, or pelvic peritonitis. Specific treatment for the colic will clear it up quickly. In other cases gastric lavage will give relief. PAUL W. SWEET, M.D.

Collins, F. A. Aseptic Resection of the Intestine. *Ann Surg* 19 2, Jan. 1909.

The method described for aseptic resection of the intestine is a method of end-to-end anastomosis and immediate restoration of the intestinal lumen by the use of a removable looped ligature. The operation is a modification of a procedure devised by Hasted which consisted of a blind-end circular suture of the intestine with the closed ends abutted and puncture of the intervening diaphragm by means of a knife introduced through the rectum. H. W. FARR, M.D.

Horne, C. F. Aseptic Technique for Resection of the Intestine. *Ann Surg* 9, Jan. 1913.

In the author's method of resecting the intestine especially the portions of the gut proximal and distal to the portion to be removed are isolated by means of a pursestring suture of heavy silk or linen thread. The suture is begun at point distal to the incision so that when it is tied the knot will be above facing the operator. All coats of the intestine except the mucous coat are included. A clamp is then placed between the two pursestring sutures on each end of the intestine to be resected. The mesentery is dealt with in the usual way and the segment of gut is removed by dividing it between the clamp and suture with the electric cautery. Before the pursestring suture is completed two release strings from the ends are placed between the two knots so that they may release the purse string at later stages of the operation.

The proximal and distal stumps are then brought into apposition and joined by interrupted mattress sutures of intestinal silk. The release strings are carried out between the mattress sutures, and as the two ends are approximated they are released until a communication of the canal being thus established after the two ends have been sealed by the mattress sutures. The pursestring which has thus been opened remains in the gut lumen and is carried through the bowel to pass out with the contents of the gut.

This operation has been performed on ten dogs and two patients.

The article contains numerous illustrations. H. W. FARR, M.D.

M. V. J. K. Involvement of the Lymph Nodes in Carcinoma of the Rectum. *Ann Surg* 9 2, Jan. 1913.

Rectal carcinoma is one of the most common intestinal neoplasms and constitutes 4 per cent of all cancers. The majority of patients are in the sixth decade of life. The incidence of the condition is slightly greater in males than in females. The duration of the symptoms is usually less than one year. The location of the growth on the rectal wall varies, but the anterior and posterior walls are involved with about equal frequency. The greater number of the growths are found between the ampulla and the rectosigmoid juncture. Adenocarcinoma is the most common type of growth. Metastasis to the glands usually takes place slowly. The liver is the organ most often affected by secondary growths. The other organs of the body are only rarely affected.

The size of the growth in the rectum cannot be relied on as an accurate index of the probable lymphatic involvement. The neoplasms without lymphatic involvement tend to grow into the lumen of the bowel, while those with slight lymphatic involvement tend to spread by direct extension and grow slowly. Carcinomata of the rectum with extensive involvement of the lymph glands tend to metastasize through the lymph stream early. Occasionally metastases may be formed by emboli breaking off into the portal vein.

Metastatic involvement of the lymph glands can be definitely determined only by systematic microscopic study of all the regional lymph nodes. The size of the lymph nodes is not an accurate index of metastatic involvement. This is especially true if the involvement is slight or the process is in the early stages.

In carcinoma of the rectum, as in cancer of the stomach, systematic microscopic examination of all the regional lymph nodes is the best method of establishing an accurate prognosis.

One hundred specimens which had been removed at operation at the May Clinic were studied. Six hundred and twenty-three glands were obtained from these specimens. In 53 per cent of the specimens there was no glandular involvement. In 50 per cent slight glandular involvement and in 27 per cent, marked involvement of the glands.

Quinland, W. S. Congenital Malformation of the Intestine—Atresia and Imperforate Anus. *Boston M & S J* 1913, Dec. 20, 870.

Quinland reports and analyzes twenty-seven cases of congenital malformation of the intestine, most of them unpublished cases from the Anatomical Museum of the Harvard Medical School.

Imperforate anus, the most common intestinal anomaly, is due to imperfect union between the rectum above and the posterior part of the cloaca common to the urogenital aperture and hindgut below. The anal aperture may be separated from the rectum by mesodermal tissue an inch or more in



depth as the result of inefficient invagination of the ectoderm to meet the rectum which may end blindly above or communicate with the exterior by some unusual opening.

In another type, the embryonic anal pit persists without the slightest invagination of the skin in this region.

In cases of incomplete separation of the cloaca to form the urogenital sinus and rectum, the rectum opens into the bladder or more commonly in males, into the prostatic or membranous urethra. These cases are frequently unrecognized. More unusual openings of the rectum have been recorded. In one case the intestine was directed upward and opened under the border of the right scapula. In another it emerged from the pelvis through the chest and neck and opened on the face.

Of the various hypotheses as to the cause of these the theory most commonly accepted is that advanced by Taubler. In the embryo of 7 mm the gut is divided into compartments by septa of proliferating lining epithelium so that in the embryo of about 14 mm the lumen may be completely occluded. In the embryo of 30 mm the compartments begin to become confluent, and in this way central lumen is re-established. When some of the septa fail to disappear a more or less complete occlusion of the gut persists.

There may be many forms of this defect resulting in blind ends not attached to each other or attached by strands of serous, muscular, and submucosa, or small epithelial tubes joining the blind ends. In some cases a malformation which as originally stenosis develops into stricture, a change which accounts for the fact that meconium is sometimes found distal to the stricture. Atresia of the intestine may occur in any portion of the intestinal tract, but the most common location is the duodenum and the jejuno ileal regions. This is probably one of the rare forms of congenital malformation.

The prognosis is grave on account of the complications, viz. hemorrhage, peritonitis, and septicemia.

Because of the probability of an ascending nephritis, it is usually wise in cases of imperforate anus in which there is connection between the lower end of the rectum and the bladder to restrict operative measures to permanent colostomy rather than to attempt to separate the rectum and bladder. If the child is female, the prognosis is more favorable, especially if the rectovaginal opening is of fairly large size. If the occlusion is high up in the small intestine death usually occurs in five or six days.

The treatment is surgical and must be adapted to the requirements of the particular case. The perineal approach is sometimes futile because, as the incision must be relatively short, it is difficult for the surgeon to explore the deeper perineal structures and find the rectum which may terminate high in the pelvis. In such event, enterostomy is necessary.

O. S. PACCOR, M.D.

## LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Gordon, J. K. Congenital Obstruction of the Bile Ducts and Congenital Biliary Cysticosis of the Liver. *Boston M & S J* 5 (1929), 973.

From a review of the literature Gordon draws the following conclusions:

Mild or severe cysticosis of the liver is found with congenital obstruction of the bile ducts.

A congenital biliary cysticosis of the liver may occur without congenital obstruction of the bile ducts and is not a result of the latter condition.

In view of the otherwise hopeless outlook, surgical interference is advisable in all cases in which positive diagnosis of congenital obstruction of the bile duct has been made.

H. A. McKENZIE, M.D.

Geopel, K. Can the Kehr Drainage of the Hepatic Duct Be Replaced by More Complete Procedures? The "Ideal Cholecystectomy" (Lam. de Kehr'sche Hepaticodrainage durch ein vollkommenes Verfahren ersetzt werden. Die ideale Cholektomie?) *Munchener med Wochenschr* 1929, 1022, 44.

The author discusses the deficiencies of Kehr drainage of the hepatic duct. The measures so far suggested to overcome the difficulties have been unsuccessful because drainage to the surface of the body is based on false principles. Drainage should occur into the duodenum, such as physiologically adapted to receive the bile and this is possible only when there is permanent side connection between the common bile duct and the duodenum.

Stitting of the common bile duct beginning at the duodenum gives good results in cases of enlarged calculi and should be done instead of drainage of the hepatic duct in cholangitis and cases of biliary colic and stones in the common bile duct when there is the slightest possibility that stones or stone fragments may be left behind. It is indicated also in cases of dilation of the common bile duct without stone (papillitis, pancreatitis).

Another procedure of value is the formation of an anastomosis as thick as lead pencil between the common bile duct in the duodenum in the acute angle here the common bile duct joins the duodenum. It is indicated less in cholecystitis, however, than in chronic biliary stasis due to tumor of the papilla or induration of the pancreas. The author discusses the technique and the advantages of the procedure briefly.

PYLANTZ (2)

Leichtenstern, The Relationship of Surgery to the Diseases of the Hepatobiliary System (Die Beziehungen der Chirurgie zu den hepatobiliären Systemerkrankungen) *Zentral f. d. d. Pathol* 9 2, 27, 32.

General anesthesia should be avoided in diseases of the hepatobiliary system as chloroform has a very toxic effect on the liver and large amounts of

have also proved injurious. Operative procedures in such cases should be carried out under anesthesia combined with twilight sleep. In the case of the hepatobiliary system are not also to hemorrhage during, and particularly during operation.

The surgical treatment of diseases of the liver is directed to the treatment of cirrhosis by the Taubert operation. In diseases of the spleen, the conditions are favorable as the spleen may be extirpated. In mucous anemias, extirpation of the spleen does not give a permanent result but is indicated as a hygienic measure. Banti's disease and familial chylotic icterus are apparently cured by splenectomy. In two of the author's cases of pseudoleukemic anemia in infants splenectomy was followed by good results. Splenectomy is not indicated in anemia.

The author reports a case of Banti's disease in which he operated in the first stage, the blood picture and the general condition were considerably improved by the operation.

Rosen (Z)

Case, P. A Case of Torsion of the Gall Bladder (Ein Fall von Gallenblasentorsion). *G. H. Z. f. Chir.* 9, 1904, 434.

The patient, a woman 7 years old, died with the picture of hemorrhagic colitis. When the abdominal cavity was opened, a uterine, markedly enlarged gall bladder was found with a pedicle which terminated at the junction of its middle and lateral thirds. The gall bladder was twisted around the pedicle and as necrotic. Surrounding the gall bladder was a circumscribed zone of peritonitis one week old, and around the liver, duodenum, gall bladder a proliferation of connective tissue to chronic inflammation. Peritoneal reduplications stretched between the duodenum, liver and gall bladder. The transverse colon and the sigmoid were strikingly long mesocolon. The latter may have been congenital anomaly. The colon showed hemorrhagic colitis which had been present for 2 weeks. Two days before death this condition became aggravated and there was severe abdominal pain which probably was due to the torsion of the gall bladder. The condition was not diagnosed before autopsy.

Von Loewen (Z)

Case, P. The Ascaris Lumbricoides in the Biliary Tract (Der Spulwurm in den Gallenwegen). *Med. Klin.* 9, xviii, 7.

The author states that the presence of ascarides in the biliary tract is by no means rare and that even the World War reports of such cases have become more numerous.

A case is reported in which incarceration of gall stone was suspected because of pain under the right costal arch but no operation as an ascus was found in the common bile duct and no stone.

The most important complications are obstruction of the common bile duct, cholangitis, and pancreatic disease. Franke concludes that in every

case of disease of the biliary tract a search should be made for the worm and its ova. In the presence of complications immediate operation is indicated.

Sonntag (Z)

Corkery, J. R. Chronic Catarrhal Cholecystitis with Lipoid Deposit. *A. Surg.* 9, 1904, 736.

Papillomata of the gall bladder occur as single or multiple lesions of the mucosa. They appear as white or yellowish bunches of grape-like bodies from 0.5 to 5 mm. in diameter insecurely attached to the mucosa by a very slender filament of tissue. The cellular changes are identical with those found in chronic catarrhal cholecystitis with lipoid deposit, namely fish scale and strawberry gall bladder. The lipoid substance is seen in large polygonal cells or round cells in the submucosa and in the walls and lumina of blood vessels. It is usually deposited in the form of fine granules. Round cell infiltration is noted in amounts proportional to the amount of lipoid deposited. The picture is that of an acute infection engrafted upon chronic infection. Every case shows fibrosis, especially about the villi. The villi become broader at the base, shorter in the long axis, and enlarged at the tip so that they are almost spherical. In the formation of a papilloma the base of the villus becomes narrowed to a slender filament, change which tends to cut off the blood supply and therefore favors necrosis and exfoliation of the papilloma. The only apparent difference between strawberry and fish-scale papilloma of the gall bladder is the shape of the yellowish white masses.

The clinical history, the surgical findings, and the postoperative results in cases of papilloma are indistinguishable from those of strawberry gall-bladder and fish scale gall bladder. The author believes that papilloma is not neoplasm but the result of chronic cholecystitis. The scarring and irritation and the resultant changes in the mucosa of the gall-bladder cause first a strawberry appearance then a fish-scale appearance, and finally a papilloma appearance of the gall bladder. A gall bladder which is chronically inflamed may show one or all three of these pictures at different times in the course of the disease.

H. W. Fink, M.D.

Case, W. N. D. C., and Kewen, F. A. A Contribution to the Study of Connective-Tissue Changes in the Gall-Bladder. *Vierteljahrsschrift f. Med. Wiss.* 9, 1904, 640.

This article is the report of a case of cholelithiasis in an insane woman 48 years of age. The walls of the gall-bladder showed extensive connective-tissue changes. Mitotic figures were not numerous but there were areas in which mitosis was an outstanding feature.

There was no metastasis, and the infiltration was limited to the surrounding structures, the liver and the cystic and common ducts. The authors hesitated to diagnose the condition as sarcoma although they felt that they might be dealing with "growth close"

resembling myxosarcoma which usually shows less tendency to metastasize than many of the other forms of malignancy. Part. W. Sauer, M.D.

McClure, G. W. and Jones, C. H. Studies in Pancreatic Function. *Annals of the Royal College of Surgeons* 1914, 100.

Abnormalities in the enzymatic action of the duodenal contents were found by the authors in cases with an organic lesion involving the pancreas primarily or secondarily and in cases in which the clinical, operative or autopsy findings indicated derangement of the external secretory function of the pancreas. From this fact it seems fair to assume that such abnormalities show pathological involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional. It is therefore justifiable to conclude that the enzymatic action of the duodenal contents indicates the activity of the external secretory function of the pancreas.

In achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas as measured by the enzyme concentration of the duodenal contents are demonstrable. These findings suggest that the presence of hydrochloric acid is not necessary for the stimulation of normal pancreatic secretion.

The external secretory function of the pancreas was found much depressed in chronic pancreatitis.

Acute pancreatic necrosis, cancer of the head of the pancreas, and leukos obstructing the pancreatic duct were accompanied by marked abnormalities in the enzymatic action of the duodenal contents (Mucous leukos caused marked decrease while acute necrosis usually caused disorganization).

The estimation of the enzymatic action of the duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions causing obstructive jaundice.

Acute and chronic cholecystitis and infectious pancreas are accompanied by disorganization of the external action of the duodenal contents.

The method used by the authors to test the duodenal contents was as follows:

A duodenal tube as allowed to enter the second portion of the duodenum its position being verified by fluoroscopy. The patient is then given a cream of 20 per cent cream in which 5 gm of barium sulphate are suspended. As soon as the flow had begun in the tube the duodenal contents were withdrawn off and collected for one hour after the barium appeared. Proteolytic activity is estimated by allowing dilution of the duodenal content to act on solutions of soluble casein. Amylolytic activity was estimated from the amount of indigestion of glucose developed by the action of the duodenal contents on a solution of soluble starch. Lipolytic activity is estimated by allowing the duodenal contents to act on true emulsion of cottonseed oil, not determining the amount of

acidity developed by titrating with tenth normal alcoholic solution of sodium hydroxide. H. A. McManis, M.D.

Boorman, H. A. H. A Pancreatic Cyst in the Left Hypochondrium Extirpated. *Urology* 1914, 697.

Boorman presents the history of a case in which pancreatic cyst was successfully removed from a man 27 years of age.

The typical case is that of an adult, he has sustained a violent blow on the upper part of the abdomen causing signs of shock. After a brief period of time globular and fluctuating tumor becomes apparent in the epigastrium. This is separated from the liver by none of the many difficult to differentiate from splenic dullness. Irritation of the stomach and vomiting is not infrequently seen in cases suggesting that the growth is behind the stomach.

In many cases there is history of loss of weight, increasing weakness, constipation, and disturbance of digestion and nutrition, and constipation. In addition there may be polyuria, glycosuria, or the presence of fat and undigested muscle fiber in the stool. In some cases the tumor may disappear or diminish in size and then grow again. As a rule the symptoms increase after the ingestion of food. The pancreatic cyst is the most painful of all the abdominal cysts. The use of the exploring needle in the diagnosis has been abandoned.

The ideal method of treatment is enucleation. When this seems impossible marsupialization (the opening of the cyst into the skin and drainage of its contents) may be tried. E. C. Roseberry, M.D.

Lownber, F., and Debaucher, H. Encysted Hamatocysts of the Spleen (Les hamatocystes enkystés de la rate). *J. de chir.* 1914, 270-264.

In the spleen, non-parasitic cysts containing blood may be observed sometimes with a distinct wall and sometimes without. The first or true cysts are extremely rare and of obscure pathogenesis. The second type appear to be encysted hematocysts. The majority of the latter are due to traumatic rupture of the spleen, but large number are formed by spontaneous hemorrhage not caused by external violence. The authors report a case of this type. The patient had history of malaria and enlarged spleen since infancy. The appearance of the cyst as preceded by sudden removal of the malarial infection. At operation an encysted hematoma was found. Macroscopic and microscopic examination showed that its contents consisted of pure blood in different stages of disintegration. On histologic examination it was found that the cysts all lacked cellular lining and as formed of connective tissue such as apparently the product of inflammatory reaction.

The authors collected eighty six cases of non-parasitic cysts of the spleen, of which forty-one appeared to be of the second type described. The authors have discovered seventeen others, including

their own. The patient almost always gives a history of chronic malaria and only exceptionally mentions any other infection. Whatever the origin a subcapsular or pericapsular collection may become encysted, rapidly increase, and rupture or become infected. The intense associated inflammatory reaction may extend and both the cyst and the spleen may become strongly fixed to the anterior and posterior abdominal walls and diaphragm by adhesions. The evolution of a blood cyst is always more rapid than that of a hydatid cyst.

When the spleen is adherent and fixed to the abdominal wall and diaphragm by old fibrous ad-

hesions the difficulties are so great that splenectomy cannot be attempted.

In the case reported by the authors hemostasis was obtained by ligation of the pedicle. The capsule was then incised the pulp separated by burrowing beneath it with the finger and the whole organ decorticated. There was no hemorrhage. Postoperative bleeding was insignificant, tamponade being done only as a precaution.

The authors have been unable to find a report of previous use of this method of subcapsular or subserous decortication of the spleen.

W. A. BRYAN

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Ledderhose, G. The Chronic Diseases of the Joints Other Than Mycotic and Neuropathic Conditions (Die chronischen Gelenkerkrankungen mit Ausschluß der mykotischen und neuropathischen Formen). *Festschr. d. Chir. Orthop.* 9, 1904.

Chronic diseases of the joints are classified according to their clinical symptoms as arthritis deformans, chronic progressive polyarthritis, and chronic articular rheumatism.

One of the chief characteristics of arthritis deformans is its very insidious and slow course which permits functional adjustment such as is not observed in any other similar condition. Arthritis deformans occurs more frequently in males than in females and usually develops in an advanced age. An important difference between this condition and other chronic joint diseases closely resembling it, such as primary progressive polyarthritis, is the fact that as a rule it attacks the larger joints, particularly the knee joint. It first causes motor disturbances in the joint, but as in the beginning these are not associated with pain they are often discovered only on physical examination. Joint crepitation is an early sign. Palpation reveals swelling, an irregular surface and, particularly, prominence of the edges of the joint all of which become more noticeable with the advance of the disease. In contrast to tuberculosis and chronic progressive polyarthritis the associated muscle atrophy in arthritis deformans is usually not very marked, and bone atrophy is either absent entirely or very slight. Friction on the primarily degenerated cartilaginous covering of the joint ends results in exfoliation of the exposed bone and cartilaginous and bony proliferations of the cartilage bone borders. In many cases loose bodies are broken off.

With regard to the etiology of the condition Ledderhose states that if the theory that arthritis deformans is a general disease is correct, the experimental injury of animal joints or static disturb-

ances in this human joints cannot produce this condition.

The analogy between arthritis deformans, gout, and joint diseases with alkali ptosis, and our knowledge regarding the etiology of chronic infectious and mycotic diseases of the joints make it appear to Ledderhose as exceedingly probable that in the final analysis the abnormal or abnormally behaving metabolic products—the expression of the arthritic predisposition—are responsible for the primary injury of the joint cartilage.

In the advanced stages of arthritis deformans of the shoulder joint the capsule is widened and destroyed. The long tendon of the external head of the biceps, which runs through the joint, is involved early, becoming stretched, displaced, or ruptured, changes which find their expression in the spherical form and the slipping downward of the external head of the biceps. Ledderhose has shown that the change in the shape of the muscle which was formerly regarded as due to traumatic rupture of the biceps is a sign of arthritis deformans.

The author discusses the effect of the disease also on other joints and its relation to injuries and inflammation of the palmar fascia (Dupuytren contracture).

On the whole the prognosis is unfavorable. Although there may be prolonged quiescence of the disease and improvement in the symptoms, the condition is progressive and incurable. In the chronic ankylosing disease of the vertebral column the shape of the vertebrae is a decisive sign in the differential diagnosis. In spondylitis deformans the vertebrae show marked changes, while the lateral articulations, which are the chief localization of the ankylosing disease, are seldom involved. Ankylosing spondylitis is not curable; therefore only symptomatic treatment comes up for consideration.

The other conditions discussed are osteochondritis deformans, gouty venula, chronic progressive destructive polyarthritis, chronic articular rheumatism, chronic diseases of the joints occurring in infancy and chronic diseases of the joints associated with alkali ptosis, porriosis, or hemophilia.

VALERIO (Z)

and gives good results in only about 25 per cent of persons of middle age. In the latter group this method may be tried first and open operation performed later if the results are unsuccessful, but such procedure is associated with loss of several months of time and shortening of the limb. In case thus treated the leg as adducted and short and pain persisted after the open operation performed by the author. This case is contrasted with another treated by immediate operation which Wierzbicki regards as the method of choice.

In the immediate operation an 8 mm incision is made over the great trochanter and traction is applied to the limb by means of the H key table. A hole is then drilled from the base of the trochanter through the neck and into the head of an autogenous bone peg taken by chisel and inserted from the outer aspect of the femur preventing the condyle from being driven in and chiseled flush. A plaster bandage is then applied with the limb in abduction and left in place for two months. During the third month massage and passive motion are instituted with the patient in bed. During the fourth and fifth months the patient is allowed to walk with the aid of splint. At the end of six months all support is removed.

In the case reported excellent anatomic and functional results were obtained with no shortening and practically full motion.

D. R. TILLEY, M.D.

**Palster, C. F. Injuries to the Crucial Ligaments and Avulsion of the Tibial Spine. *Boston M & S J* 9, March 1921**

In the author's opinion rupture of the crucial ligaments is not as serious as was formerly believed as very good function may be expected after injuries of this type and the operative treatment is associated with very little risk. In the majority of cases the conditions call for tunneling operations and transference of muscles or transplants of fascia. The crucial ligament may be repaired or bridged through median incision in the patella. Protection with a cast splint for several months after healing is begun should be insisted upon.

Avulsion of the tibial spine should be treated conservatively by the application of cast with the leg in extension.

The comparatively good function which frequently follows rupture of the crucial ligaments is explained by the fact that as a rule the contour of the articular surfaces of the femur and tibia is not changed.

When a person with arthritis lies in bed for long time with his legs in slight flexion or complete extension the condyles become squarish and the tibia subluxated to such extent that he is completely incapacitated even before the cartilage has become eroded or the capsule or ligaments greatly changed. If such osseous distortion can be prevented the prognosis as regard function in the knee joint is very favorable.

THOMAS LEWIS, M.D.

**Moore B. H. Subastragaloid Dislocation of the Foot. *Surg Gynec & Obst* 92, Nov 1921**

Subastragaloid dislocation of the foot, in which the os calcis and the scaphoid are displaced from the astragalus, is a rare injury. Its causes are usually a fall from a height in which the weight of the body is received on the adducted or abducted foot, or violent blow on either side of the lower part of the leg. The dislocation may be lateral, outward, backward, or forward. When it is outward, the astragalus sinks down as the result of weight bearing, the foot becomes everted and abducted, and the head of the astragalus becomes prominent on the inner side. When the dislocation is outward, the interosseous ligament is ruptured between the astragalus and the os calcis, and the astragalocalcaneal ligament and portions of the distal ligament are torn.

The treatment consists in primary reduction when possible, the method depending upon the type of the dislocation and being based on the principle of reversal of the force which caused the dislocation. For old dislocations in which reduction is impossible astragalectomy is the method of choice.

FRA. G. MILLER, M.D.

**Wessinger A. A Case of Breaking Off of the Tibial Condyle (Tuber cruris). *Fall vom Abbruch des Tuber cruris*. *Wien Klin Wochenschr* 1922, Nov 6/13**

The author reports a case of violent fracture of the tuberosity of the os calcis in which there was dislocation in the longitudinal axis, the distal end and rotation of the proximal fragment about 90 degrees. The broken off fragment was immediately replaced by open operation as perforation of the skin threatened. It was possible to approximate the bones by marked plaster flexion and to fill them

with strong silk sutures (plantar fascia to the posterior surface and the insertion of the Achilles tendon). A plaster cast was applied in the pointed toe position.

The wound healed by primary intention and the roentgenogram showed good callous union. The after treatment included active and passive motion, baths and massage. Function is almost normal, but prolonged walking caused great fatigue and pain. The patient could not follow his calling (carpenter) completely after five months. Such injuries often produce long continued disturbances.

These fractures may be due to indirect causes (such as tension of the musculature of the calf and falling on the foot in the position of marked plantar flexion) and to the direct effect of force against the tuberosity of the os calcis. Zur Verth does not recognize avulsion fractures in this region but speaks of compression fractures, with or without destruction of the framework of the foot (the investigations of Tixier and Hensling showed that the Achilles tendon is not inserted at the upper, posterior border of the os calcis). During the World War Zur Verth observed fractures of the tuberosity of the os

calds due to a force from below rather than to contraction of the Achilles tendon. H. claims that there is also a longitudinal compression as the tuberosity is released from ligaments under tension.

The author believes that in his own cases direct force was responsible, the foot being wedged and the body sinking to one side so that the fragment was twisted.

The treatment is usually conservative, consisting of the application of a plaster cast with the foot in plantar flexion and the knee bent. The author recommends tenotomy to eliminate the tension of the muscles and to avoid the long continued pointed foot fixation otherwise necessary. Zivner (2)

### SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Henderson, M. S. Surgery in Infantile Paralysis. *Minnesota Med.* 9 706

After passing briefly over the treatment of infantile paralysis in the acute stage and the period of recovery the author discusses the various operations of value in the stage of residual paralysis. During the period of recovery there may be deformities due to improper muscle balance after partial paralysis and the deforming action of gravity which proper splinting would have prevented.

Emphasis is placed on the proper selection of cases for surgery. The case should be studied as a whole, and special attention should be paid to the gait. The patient or his parents should have a clear understanding of just what is and what is not to be expected from a certain operation. Of 74 cases treated conservatively at the St. Jo. Clinic 5 per cent were subjected to surgery.

Manipulation, tenotomy, osteotomy, arthrodesis, tendon plastics, tenodesis, and astragalectomy are considered in turn. In the contractures of deltoid paralysis, mild hip or knee flexion and mild equinovarus much can be accomplished by manipulation alone either by the daily application of moderate force, the position gained being held by suitable splint, or by forcible correction under anesthesia. In straightening the knee care must be taken to prevent subluxation. Tenotomy is indicated only when nothing further can be accomplished by manipulation. In talipes equinovarus, if the tendon of Achilles is cut before manipulation the fulcrum action is lost, and it is difficult to correct the arm. Frequently section of the plantar fascia is necessary.

Osteotomy is next considered. In cases of deformed feet after manipulation and tenotomy osteotomy through the tarsal bones is often necessary. In characteristic deformity of distal lower extremity with some power in the hamstrings and extensor fasciae femoris, the thigh is flexed and abducted and the knee is flexed and possibly subluxated with out and rotation of the leg below the knee. After the hip and knee have been straight-

ened there is often a knock-knee and an everted foot, the latter due to the rotated tibia. An osteotomy through the lower end of the femur and another through the upper third of the tibia, and possibly the fibula, may be necessary to correct the two deformities. Correcting the line of weight-bearing restores function in a surprising manner for weak muscles are placed by the correction in a more favorable position for work. It is well known that a limb without paralysis tires very easily when the weight-bearing line is faulty.

Arthrodesis should be used to increase function and give stability to the lower extremity and to increase function in the upper extremity. Arthrodesis in the lower extremity should be used only when the extremity below the joint to be fixed is capable of being made to bear weight or in other words, when the fixed joint can be used to advantage. Some persons may prefer to use a brace rather than to have a stiff knee. Astragalectomy is usually preferable to arthrodesis in the ankle joint. As all lateral mobility occurs below the astragalus, astragalocalcaneal arthrodesis is sometimes of value in stabilizing the foot. Astragalocalcaphoid arthrodesis may be used to overcome a tendency to eversion in the forepart of the foot. Arthrodesis is of value in the shoulder joint only when the scapular muscles are intact even when the elbow cannot be voluntarily moved, for when the arm is raised from the side, gravity will bring the hand to the head. If the hand is paralyzed, arthrodesis is contraindicated. The elbow may be arthrodesed in the position of extension, but the patients get along so well as they are that they do not often choose arthrodesis.

Better results than heretofore are now being obtained in tendon plastics because of better selection of the cases and better understanding of the limitations of operations on the tendons. In the foot of a patient with paralyzed tibialis anticus and strong peroneals, one of the peroneals may be transferred to the tibialis anticus. If the peroneal group is paralyzed and the tibialis anticus is strong, the tibialis anticus may be transferred to the cuboid bone on the outer side of the foot. Transfer of the peroneals to the tendon of Achilles for talipes calcaneus and transfer of the extensor longus hallucis to the front part of the foot for toe drop have been disappointing in the author's experience. Failure is certain if weak muscle is transferred to replace strong one. Transfer of the biceps femoris occasionally to the semitendinosus to the patella when the quadriceps extensor is paralyzed is very satisfactory as it gives stability to the knee even though the patient is not able to extend the knee fully. Opportunity for tendon transference in the upper extremity is rare, at least in infantile paralysis.

By tenodesis it is possible to prevent foot-drop by fixing the distal parts of the paralyzed extensors of the toes and the tibialis anticus into the tibia. It is possible also to prevent calcaneal deformity by implanting the tendon of Achilles into the tibia. The use of tenodesis has been disappointing in the

author's experience because the tendons have so often slipped at the new insertion to the bone.

Astragalectomy with posterior displacement of the foot is indicated chiefly in calcaneovalgus, but may be used to advantage in flat feet. The most important points of the operation are backward displacement of the foot and the maintenance of a leg with slight equinus.

Reid M. R. The Use of Large Reverdin Grafts in the Healing of Chronic Osteomyelitis. *Bull Johns Hops Hosp* 9: 323-35.

The treatment of chronic osteomyelitis is based upon the obliteration of the bone cavity. Reid introduces a new method, the use of so-called patch grafts. The technique is as follows:

The bone cavity is treated with Dakin's solution until it becomes lined with clean, firm granular tissue. Without the use of this or some other antiseptic solution, the granulation tissue will become crustaceous, forming an unhealthy base for the growth of the grafts. Two hours after the last irrigation with the Dakin solution, large, thick patch grafts 1 cm in diameter are placed closely together upon the surface of the cavity. The grafted wound is then exposed to the air from six to eight hours. This period of drying serves to fix the grafts firmly into the granulation tissue. The grafts are then covered and held in place with a single layer of gauze firmly fixed to the skin.

During the next 10 days saline compresses are applied. Dakin's solution is then used instead of the salt solution for six days, being applied by laying wet compresses directly against the wound every 4 hours during the day and every four hours at night. At the end of this time the wound is dressed with protective rabbit or oak-bacon.

The grafts grow quickly and cover the granulation tissue with epithelium in from ten days to 1 week. If the granulations become high, Dakin's solution is re-applied for one or two days to reduce the swelling. Caustics should not be used.

The technique described is of value especially for the closure of large bone cavities which are difficult to obliterate by other methods. The epithelial covering formed by patch grafts is thicker and more durable than that formed by Thiersch grafts and therefore will better withstand the action of the moisture present in deep cavities.

S. C. WOODWARD, M.D.

Garspeid, W. C. Arthroplasty of the Elbow. *Ann Surg* 4: 1004, 45.

Cases for elbow arthroplasty must be chosen judiciously.

The following pathologic conditions mentioned by the author decrease the chances of success or contraindicate surgical interference: (1) tuberculous, (2) osteitis with much shortening of the extremity, (3) extensive scars binding the skin to the bone, (4) extreme muscular trophy with reorganization of bone structure as when, after a long

time the medulla of the humerus and ulna become continuous, and (5) old rheumatoid bone extending a considerable distance on each side of the joint.

Two conditions alone justify arthroplasty: fractures with ankylosis following trauma, and ankylosis following infection.

There are five methods of arthroplasty:

1. Wide excision of the articular surfaces. Usually an unstable joint results.

2. The interposition of pediculated fascial flaps between the remodeled articular surfaces. This method has been almost lost.

3. The interposition of animal membranes. The disadvantage of this procedure is infection caused by foreign body irritation.

4. Free fascial lata transplantation.

5. Mechanical reconstruction of the surfaces of the joint and the interposition of various substances.

The author makes a 6- to 8-in incision on the posterior aspect of the arm and forearm, just external to the midline, beginning about the middle of the humerus and extending about 2.5 in below the elbow joint. Skin, superficial fascia, and deep fascia are incised and separated. In this manner the spontaneous of the triceps is exposed. This structure is dissected from above downward, making a long incision attached to the olecranon below. The incision is continued through the muscular fibers of the triceps and the pectorum over the lower half and the pectorum then stripped from the lower end of the humerus. Scar tissue, callus, and loose bony particles are removed.

About 3½ in is removed from the lower end of the humerus, and the cut end is remodeled into a surface convex from before back and ¼ in upward to reproduce the normal anatomy of the bone. About 4 in is cut from the tip of the olecranon process. The bone is removed until healthy spongy bone is exposed.

The radio-ulnar joint is not disturbed, but the surface of the radial head must be on the same level as the coronoid process. The pectorum and triceps muscle are dissected into double flaps, each is attached to the anterior capsule and serves to separate the raw bony surfaces. When the radio-humeral joint is normal and there is bony ankylosis between the ulna and humerus, the radio-ulnar joint is not destroyed, a hemiarthroplasty being done between the humerus and ulna. When in such cases it is impossible to obtain posterior flap of sufficient size, the spontaneous tongue from the triceps is placed between the surfaces. The capsule of the joint is attached to the posterior aspect of the triceps and deep fascia.

In one case full flexion and extension have been secured with no motion in the radio-ulnar joint.

The after treatment is important, and there must be co-operation between the surgeon and physiotherapist. Active motion is essential.

JOHN MINCHIE, M.D.

Roberts, F. W. A New Approach to the Semilunar Cartilages. *J Am Med Ass* 1923, LXIII 608

The new approach described by the author eliminates strain on the wound when the knee joint is flexed and obviates suturing of the synovial membrane.

A blunt V-shaped incision is made one arm of which begins about  $\frac{3}{4}$  in. above the upper border of the tibial condyle and follows down the border of the patellar ligament for distance of  $\frac{3}{4}$  in. The knife is then carried transversely outward a short distance and then upward inside the lateral ligament to the level of the opposite arm. This incision is made through all tissues overlying the tibia including the periosteum. With a periosteal elevator the flap is separated and retracted upward until the coronary ligament is exposed. The coronary ligament is incised transversely at its attachment to the tibia. On further retraction the meniscus is exposed and may be dissected out with narrow-bladed knife. The periosteum and overlying tissues are then replaced and sutured in position with interrupted chromic gut sutures not including the synovial membrane. The skin is closed with silk. The firm suturing of the periosteum prevents strain on the knee wound even when the knee is flexed at 90 degrees.

FIG. C. MONROE M.D.

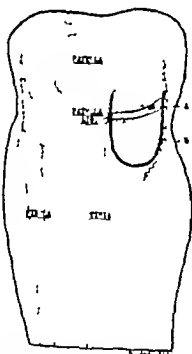


Fig. Line of incision for exposure of internal semilunar cartilage. A, internal semilunar cartilage; B, line of incision. (Roberts)

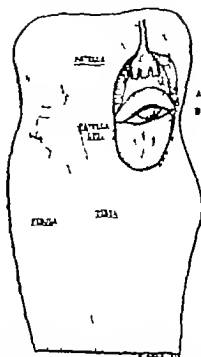


Fig. Flap retracted upward, showing exposure of contents on its under surface. A, internal semilunar cartilage; B, medial condyle of femur. (Roberts)

Monod H. Wounds of the Knee (Les plaies du genou). *Presse med* Par 92, XX 96

Monod reviews the treatment of wounds of the knee during the World War. Arthrotoomy for drainage was the method in general use in the beginning but was abandoned because of its disastrous results. In the treatment then adopted the joint was opened, well cleansed of all debris, closed by primary suture and treated by active mobilization.

In the war of 8-9 the immediate mortality of knee wounds in the French army under a policy of surgical retention was between 4 and 50 per cent, while in the German army in which immediate resection was done it was 80 per cent. In a series of 208 cases treated by arthrotoomy for drainage during the World War there were fifty-two deaths, thirteen secondary resections, and forty-one subsequent amputations in addition to numerous instances in which ankylosis resulted, while in 328 cases treated by mechanical cleansing of the joint followed by primary suture there were 32 recoveries without ankylosis.

W. A. B. 1924

Langner The "Grütl" Amputation in Insurance Medicine (Der "Grütl" in der Versicherungsmedizin). *Arch f orthop u. allg Chir* 93 22 49

Langner considers the results of the Grütl technique from the standpoint of industrial



medicæ. In his thirty-five cases of accident injuries full weight bearing capacity was present in only eight no weight at all could be borne on the stump in thirteen and only partial weight bearing was possible in four. The patella was in proper position in twenty cases, and displaced with out impairment of the weight bearing capacity in five. Shortening of the thigh amounting to 2 or 3 cm and atrophy of the musculature up to a minimum circumference of 1 cm at the midline were other sequelæ. The permanent compensation averaged 60 per cent. For patients are still able to

earn their living, seventeen are partially incapacitated, and five were unable to work. In 40 per cent of the cases a high amputation of the leg would have been sufficient. Very often difficulty is experienced with the artificial leg. The Gritti stump is not favored by manufacturers of appliances because it requires special construction of the weight bearing surface.

On the basis of his thirty-six cases the author comes to the conclusion that the Gritti amputation has no marked advantages over low amputation of the thigh. (Carter 22)

## SURGERY OF THE SPINAL COLUMN AND CORD

Schede F. Puncture of the Prevertebral Abscess (Die Punktion des prävertebralen Abszesses) *Munchen med Wochenschr* 9, 2, 19, 779

It must be assumed that the paravertebral spondylitis is caused less by collapse of the vertebra than by the pressure of the prevertebral abscess. If the prevertebral abscess is to be punctured from the rear the surgeon must determine its depth in order that he may know how deep to insert the needle. Schede's procedure described in detail in this article makes it possible to determine the depth of the abscess by the aid of the X-ray.

It can be successfully evacuated only if the bottoming of the abscess has not proceeded too far. When the pus has once made its way down and the prevertebral abscess does not fill again and only a wall remains visible in the roentgenogram, hence, puncture is less suitable for abscesses of the lumbar spine than for those of the dorsal spine. See the latter usually better later.

The author warns against the use of Calot's solution after puncture of spondylitic abscess. On account of the rapid diffusion of the cresonate either contained in the solution one of his patients suffered an immediate slight shock with coughing and the expectoration of sputum tasting strongly of cresonate.

The effect of the relief of the pressure on the medulla is usually noted very soon after the puncture.

Puncture of prevertebral abscess is to be looked upon as a safe and very effective method much to be preferred to conservative treatment. It almost entirely excludes the possibility of secondary infection. (The Editor 23)

Kram and Wlents. Cervical Rib (Letter (Helsing)) *Deutsche med Wochenschr* 9, 2, 19, 915

A woman, 31 years old, complained of pain in the right arm, but occasionally particularly cold weather became more severe and radiated into the occiput. These attacks were characterized by a waxy pale discoloration of the right fingers and bluish discoloration of the tip of the right index finger.

Careful examination revealed distinct widening of the subclavian artery in the supraclavicular fossa

and rapid pulsation and a thrill under the superimposed finger. When the artery was displaced hard resistance was noted. The last pulse was weak and the radial pulse absent. The roentgenogram revealed the presence of a cervical rib impinging upon the first thoracic rib. The patient delayed surgical treatment for two months.

At operation the subclavian artery was exposed by a Kocher incision. Since the time of the first examination it had become thrombosed. The rib was removed first in the direction of the vertebra and then in the direction of the chest. Rib care not to injure the brachial plexus, the transverse cervical artery or the axillary artery. The resulting hole in the dome of the pleura was covered by rotating tissue over it. A complete cure had not been obtained at the end of five months but the claudication subsided pulsation.

There are other cases of cervical rib are reported in brief. The literature on the subject is reviewed and reference is made to Stenroos' operation which began at the base of the neck. (Pezze 24)

Openshaw T. H. Traumatic Spondylitis. Proc. Roy Soc. Med. Lond 9, 2, 19, Sect. Orthop.

The author reports fourteen cases of traumatic spondylitis or fracture dislocation of the spine. In three cases the cervical vertebrae are involved in the dorsal vertebrae, and in five the lumbar vertebrae. In one case there was loss of motion in the neck and marked swelling of the muscles of the forearm and shoulder, partial reduction of the dislocated vertebra under anesthesia, as followed several days later by loss of power in the other arm. This complication was transient, however, and the patient ultimately made complete recovery.

Another case reported that of a woman whose right arm became painful and weak following dislocation of the fifth cervical vertebra by fall. Openshaw made an incision over the median line of the neck and united the laminae together. Power in the right arm steadily returned. Removal of the wire after four months was followed by recurrence of the weakness.

Openshaw states that in fracture dislocation of the dorsal and lumbar spine the most important

sign is hyperaesthesia of the intercostal nerves, the so-called "girdle pain," or pain along the course of the lumbar or sacral nerves. This sign is of value because it indicates which of the intercostal nerves corresponds to the site of the fracture dislocation. A stereoscopic examination is also of great aid in the diagnosis.

The X-ray will show: (1) anterior and lateral compression of the body of the vertebrae, (2) wedge formation of the vertebrae, (3) obliquity of the surfaces, (4) irregularity of adjacent surfaces of the vertebrae, (5) gaping of the anterior part of the intervertebral spaces, (6)ipping of the anterior edges of the upper and lower surfaces, (7) central absorption of the vertebral bodies, (8) separation of the ribs due to kyphosis, (9) angular curvature, (10) ankylosis and synostosis, (11) lateral deviation and (12) rupture of the supraspinatus and interspinous ligaments.

For cases of traumatic spondylitis in the cervical region the author recommends manipulation to force the vertebrae into place, the temporary application of a leather or felt collar or plaster of Paris, and wiring of the laminae, the wire being left in.

Cases in which the dorsal vertebrae are affected should be treated by recumbency if the condition is venous, by the application of a leather corset with arm supports, and by wiring if the kyphosis tends to increase.

When the lumbar region is the site of the lesion Openshaw applies a leather corset and laces the spinous processes together with silver wire.

Suppuration is rare unless there is an open suppurating wound elsewhere. The pain decreases quickly in severity and extent after the spine is immobilized. The cure is slow, requiring eighteen to thirty months.

The article is illustrated with seven roentgenograms. S. C. WOODWARD, M. D.

Schneider G. E. Rhenomelic Spondylitis Spondylitis Deformans (Spondylitis rhenomelic spondylitis deformans). *Urbach's Layer* 9, June, 1913.

I eighteen of twenty-five at topicae a very young persons rheumatism suggests of arthritis deformans were found although there had been no nervous symptoms during life.

One of the two cases reported, that of a man 4 years old, the author designates as case of rhenomelic spondylitis with typical complete ankylosis of the spinal column, kyphosis of the cervical and upper thoracic spine, obliteration of the lumbar curvature, and slight muscular atrophy. The X-ray revealed narrowing of the intervertebral discs and fusion of the bodies of the vertebrae. The noteworthy features in the history are gonorrhea and syphilis. Otherwise the course of the disease was the usual one, beginning with pain in the spinal column and ending with rigidity. The author leaves open the question of the etiology but is inclined toward the view that the gonorrheal infection may have been an exciting factor.

The second case, that of a 35 year old man, the author designates as a case of arthritis deformans. This began with pain in the vertebral column and the extremities and ended with rigidity of the spinal column in a markedly stooping position and muscular atrophy. The X-ray showed excrescences around the vertebral bodies which finally spread from one vertebra to another in the form of bony bridges. The author believes the diagnosis should be based on the X-ray findings. SERRY (2).

Godard R. B. Bony Bridging in Tuberculous of the Spine. *J. Am. M. A.* 1913, June, 301.

The presence in the spine of hypertrophic changes associated with bony bridging and ankylosis of the vertebrae has been regarded since the advent of roentgenology as evidence of the strictly non-tuberculous nature of the disease. This theory the author believes is incorrect. Since it is known that mixed infections due to external drainage of cold abscesses often give rise to bridging, he regards it as not improbable that such bridging may result also from secondary infection of the tuberculous process carried by the blood stream from some septic focus in the body.

The localization of the chronic low grade infection in the superficial portion of the vertebra in juxtaposition to the osteogenic periosteum may be responsible for the laying down of bone, the same process in the center of the vertebra having no such action. The regional location of the vertebra in the spinal column is also a factor since as a rule the spurs are found in the lumbar region where the reaction to the strain of weight bearing is greatest. Although usually tuberculous does not produce bone, the reaction to any infection varies with the situation of the process, and the spinal articulations are more apt to react to infection by ankylosis than any other joints in the body. D. R. THORPE, M. D.

Kleinberg S. The Operative Treatment of Scoliosis. *Arch. Surg.* 9, 2, 631.

A complete cure of structural scoliosis cannot be obtained by any known method. Treatment is directed toward reducing the curvature, improving the appearance of the back, and maintaining the improvement.

Both Hibbs and Forbes advocate a fusion operation to obtain osseous union of the posterior arches of from eight to eleven vertebrae.

He then employs the Hibbs fusion operation and a graft of beef bone.

Before the operation the patient is placed on a convex frame, the highest point of which is under the midthoracic region. Traction is applied to the head by means of a Sayre halter and to the trunk by pelvic belt with weights suspended from cords over pulleys at the foot of the bed. Weight is not applied until the position is no longer irksome. It is then applied gradually. The head weight arises from 5 to 10 lbs. and the pelvic weights are a little heavier. If there is much anteroposterior or lateral deformity

a Balkan frame is used and forward or lateral traction is applied. Traction is continuous except a few times, during the bath and during massage. The patient is ready for operation when the maximum degree of correction is obtained. A great degree of improvement is obtained in four to eight weeks by this method (than can be obtained in more than six months by means of corrective plaster of Paris jackets).

The preparation for the operation is important. A beef bone graft cut to the shape and size desired is boiled for several hours placed in a closed container with ether and just before the operation boiled again for half an hour. Traction racks are then cut in it for vascularization. Three days before the operation traction and massage are discontinued, the back is thoroughly scrubbed, and a sterile dressing is applied. On the second day the same procedure is repeated. On the morning of the third day the back is painted with one half strength tincture of iodine and another sterile dressing is applied. If the operation is to be performed in the morning the iodine is applied the night before.

The author's operation combines the technique of Hibbs and Albee. Most of the arches of a simple curve and all the arches of the dorsal segment of a compound curve are included.

In making the skin incision the knife is carried through to the muscles. The arches of muscles and peritoneum are laid bare. The paravertebral incision is laterally to the tips of the transverse processes and the joints of the articular processes are scanned or destroyed. Claps of bone are removed from the laminae and placed across the interlaminae spaces. The spinous processes are split and turned down so that the tip of the process above fits into the space at the base of the spinous process below. The spinous processes of the 12th vertebra at the upper limit of the curve and of 10 below the lower limit are split. A graft long enough to cover the vertebrae operated on about 8 mm. wide, somewhat less than 6 mm. in thickness, and in a curve corresponding to the spinal curve is laid in the wound upon the laminae and transverse processes on the concave side of the curve and its ends are embedded between the split segments of the transverse processes. The paravertebral and muscles are sewed with interrupted kangaroo suture, and the subcutaneous tissue and skin with catgut. A warm sterile flannel jacket is applied over the sterile dressing.

In a week or ten days, when the patient has recovered from the immediate effects of the operation he is replaced on the frame, traction is applied, and massage and exercise of the limbs are begun. At the end of eight weeks he is usually able to stand up. A light cellulose plaster jacket is then worn for several months.

The entire course of treatment requires from six to nine months.

The immediate results obtained by the author have been satisfactory but the time which has elapsed is not sufficient to arrive at conclusions as to the final results. JOHN SIMON, M.D.

Hackenbroch M. The Coagulation, Pathology and Treatment of Spinal Epidural Occults and Its Sequelae (Zur Kasuistik, Pathologie und Therapie der Spinal Epidural Occults und ihrer Folgezustände). *Marburger med. W. h. b. 1922*, 19.

The case reported was that of a girl 12 years old who had an increasing deformity of both feet since her third year and nocturnal enuresis since earliest infancy. Examination revealed talipes curvus with hyperextension of the toes of both feet. On passive dorsal flexion distinct spastic resistance was felt. The skin of the feet was dry and cold. At the level of the last lumbar vertebra was a swelling 7 cm. long and 4 cm. wide which raised the skin about 5 cm. This tumor was elastic and the skin over it was movable. The roentgenogram showed a kink in the arches of the third, fourth and fifth lumbar and the first, second, and third sacral vertebrae.

At operation curved incision as made with its base downward. The tumor appeared to consist of normal muscle tissue embedded in the fascia. When the vertebral canal was opened the dura was found adherent to the posterior aspect of the bony arches by firm fibrous bands, some of which were 1 cm. thick. The bands were separated and removed. Careful separation of the muscle mass from the substratum revealed a sort of spinous process on both sides which was attached in the center by firm and apparently bony tissue forming the substratum of the muscle mass. Following resection of this formation lipoma about the size of cherry was found adherent to the dura and vertebrae.

One hour after the operation the feet were normal and their color as normal. The operation cured the enuresis also. A month later the deformity of the feet was corrected surgically. FOUR (2)

## SURGERY OF THE NERVOUS SYSTEM

Langehaek O. Technique of Nerve Sutures (Zur Technik der Nervenastik). *Zentralbl. f. Ch.* 93, 1922, 155.

Following excision of the neurosis, the nerve stumps, through which silk threads have been drawn, are introduced to a cold artery and brought as close together as possible by drawing on the threads. Before the threads are cut and withdrawn the ends

of the artery are fastened to the nerves on both sides by fine silk sutures. The nerves are joined through an opening in the middle of the artery.

If the space between the ends of the nerve is so great that despite stretching, the ends cannot be joined the artery is left unopened or the opening is stitched with catgut and the skin wound closed. After successful stretching by changing the position

of the joint the artery is again exposed and opened and the nerve sutured. Subsequently the artery is removed. TROSKER (2)

Brenning, F. and Stahl, O.: The Physiological Effect of Extirpation of the Peri Arterial Sympathetic Nerve Plexus. Peri Arterial Sympathectomy (Ueber die physiologische Wirkung der Extirpation des perivascularen sympathischen Nervengeflechtes perivascularer Sympathektomie). *Klin. Wochenschr.* 1921, 4, 40.

Even in a peri arterial sympathectomy performed according to the Leriche method it is seen on sepa-

rating the adventitia that the caliber of the dissected portion of the vessel gradually diminishes. This contraction lasts up to six hours in the exposed area and occasionally inhibits the peripheral pulse. Ultimately the tension which prevailed previous to the operation is exceeded. Evidently there is first an irritation of the skin and then a hyperemia which causes paralysis of the vasoconstrictors. The effect of adrenalin was not considered as the experiments were performed under anesthesia. Hyperemia is regarded as the most important factor in the cure of vasomotor trophic disturbances.

W. MERTZ, DUISBURG (2)

## MISCELLANEOUS

### BLOOD

Brown, G. O.: Blood Destruction During Exercise. Blood Changes Occurring in the Course of Single Day of Exercise. *J. F. for M.* 9, 2, xxviii, 43.

The studies of several investigators have shown that normally the destruction of erythrocytes is accomplished, in part at least, by process of fragmentation in the blood stream. There is evidence that the breaking up is the result of mechanical injury.

The investigations here reported by Brown were undertaken to determine whether an increased rate of blood destruction can be demonstrated during exercise. Since the subject is so closely linked with the general question of fluid and cell changes during exercise a number of observations were made in this connection, and it is with the latter that this article is largely concerned.

Two types of blood volume determination have shown themselves to be of practical value for use on the living animal. The first is the well-known carbon monoxide inhalation method. The second entails the addition of some substance to the blood plasma and the subsequent determination of its degree of dilution. Since the carbon-monoxide method cannot be repeated readily within a single day the dye method as adopted for use in the 'thor' experiments.

The experimental animals were dogs. The chief reason for choosing dogs, apart from their general utility was the special susceptibility of their red corpuscles to mechanical injury. The animals were kept in individual cages and fed upon a mixed diet containing considerable meat. To prevent changes in the blood plasma food was not given upon the day of the experiment until after the last blood-volume determination had been completed. For purposes of exercise treadmills were used. The number of miles traveled as recorded by bicycle odometer (attached to the machine).

Previous studies by other men have shown that considerable reliance may be placed on plasma volume figures obtained by the vital red method.

The author's findings indicate that the initial concentration of the blood during exercise is not due to loss of fluid, since there is no decrease in the plasma volume. On the contrary one investigator reports that there is a distinct increase, especially when the exercise is prolonged.

The calculation of total cell volume was made on the basis of the percentage volume of cells in the blood of the jugular vein, the total plasma volume being known. Hemoglobin, pigment volume and red-cell count are also influenced by changes in the ratio of cells and plasma. The initial increase in the total cell volume observed in these experiments could not have been due to mere swelling of the cells as the hemoglobin also increased.

It is not impossible that changes in the size of the red cells occur during exercise. A general swelling of the cells might readily lead to an increase in the cell volume. However the close parallelism between the curves for cell count and pigment volume indicate that the results were not due to this cause for if this were the case there would have been disproportionate changes in the pigment content and cell bulk. The red counts recorded by the author were too few in number to furnish reliable data as to a change in cell size and the literature on changes in cell size during exercise is extremely meagre.

Praeger Jones, working with dried blood smears, concluded that the cells become larger. The author's findings tend to confirm this view as the decrease in the cell volume during prolonged exercise is not nearly so great as the decrease in the pigment volume.

Brown states that after prolonged exercise both total cell volume and pigment volume fell well below the maximum noted after ten minutes of exercise. Because of the uncertain factor of cell distribution it would be unwise to conclude that blood destruction occurs during exercise, on the basis of the data of these experiments alone, although there is no doubt that the findings are in harmony with such a view.

From his findings the author draws the following conclusions:

An increase in the percentage of cells and hemoglobin in the blood of the jugular vein occurs early in the course of exercise and probably results from redistribution of the red corpuscles, increasing their proportion in the peripheral blood.

2. As exercise is continued, there is a definite increase in the plasma volume.

3. A coincident decrease in the total cell volume and the pigment volume during prolonged exercise suggests blood destruction.

GEORGE E. BRIDLEY M.D.

### BLOOD AND LYMPH VESSELS

Wirtz, W. C. F. and Zillich, H. Z. Traumatic Rupture of the Femoral Artery with Haematomata. *Musculus M. J.* 9, xxi, 8.

The authors report a case of traumatic rupture of the femoral artery in a boy 17 years of age due to a motor-cycle accident. The patient was brought to the hospital in a state of shock with firm, non-pulsating mass 20 m. in diameter in the left inguinal region between the skin and muscles of the abdominal wall. The leg showed sensory and motor disturbances. Pulsation was noted in the popliteal space.

Morphine was administered and external heat applied. The next day the artery was ligated. On the twelfth day amputation of the leg was done because of the development of dry gangrene of the foot with a definite line of demarcation below the knee.

Operation is contra indicated in shock unless it is necessary to save life or the condition is becoming rapidly worse. In the treatment of shock the psychological element must not be forgotten. Heat is essential. The feet should be warmed to prevent cerebral anemia, and if the blood pressure falls below 80, saline or glucose solution should be given intravenously or subcutaneously. Transfusion of blood is indicated by persistent hemorrhage. Hot rectal enemas of coffee or barley are of great benefit. Strychnine is contra indicated. MARCE H. HOBART M.D.

Cornelley, Surgery of the Arteries. Transplantation of Arteries by the Nagao's Method (La chirurgie artérielle testative de greffes artérielles par la méthode de Nagao). *Schweiz. Rundschau Med.* 923, xxii, 238.

War surgery made little progress in the surgery of the arteries. As ligation of the main arteries (humeral and femoral) leads to gangrene in 40 per cent of the cases, the continuity of the vascular lumen must be maintained as much as possible. In experiments in which calf artery 3 cm. long was implanted into the carotid artery of dog according to the method of Carrel with interrupted sutures the tube healed but soon became impermeable although an attempt as made to prevent coagulation by previous irrigation with citrate solution. In vascular suturing the interrupted suture is better than the continuous suture. STRAUSS (Z).

### SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Chikuri, O. M. Extirpation of the Adrenal in Epilepsy (Zur Frage der Nebennierentherapie bei Epilepsie). *Deutsche Zeitsch. f. Chir.* 19, clxxx, 244.

The von Haberer and the Schraden clinics have abandoned this operation. Following technically difficult extirpation of the adrenal gland done by von Haberer in the case of an epileptic 29 years old subphrenic abscess and empyema developed. During the stormy convalescence the epileptic attacks became less frequent, but later recurred again in their original severity. RABENHUT (Z).

Kramer, H. Singultus (Ueber den Singultus). *Ergebn. d. Chir. Orthop.* 9, xv, 35.

Singultus is due to a clonic spasm of the diaphragm resulting from stimulation of the respiratory center. It may be caused (1) through the central nervous system (2) chemically through the blood stream, and (3) reflexly through stimulation of sensory fibers of the phrenic and sympathetic nerves.

The author discusses singultus as a symptom of disease, citing for illustrative cases from the literature.

The various types of singultus include the fetal singultus, the unilateral clonic spasm of the diaphragm, and the postoperative singultus appearing particularly after operations on the stomach and the urinary tract.

The treatment indicated when other remedies fail is phrenicotomy or blocking of the phrenic nerve by the injection of novocaine or freezing.

In a case reported numerous drugs were found of no avail, and even after a unilateral phrenicotomy the singultus returned. After division of the phrenic nerve on the other side cure was effected through complete paralysis of the diaphragm. The patient then complained only of slight dyspnea in the dorsal position. FACKER (Z).

### ROENTGENOLOGY AND RADIUM THERAPY

Dumas, W. The Scientific Basis of Roentgen Beam Length Therapy. *Am. J. Roentgenol.* 1922, vii, 76.

Recent advances in roentgen therapy have emphasized the importance of employing very penetrating radiation, and of accurately estimating the dosage. The primary object of roentgen therapy is the treatment of malignant disease as the destruction of the tumor mass. If the tumor lies some distance below the surface of the skin, the radiation projected into the tumor must first pass through the skin itself and the intervening tissues. The amount of radiation that can be projected into and absorbed by the tumor depends upon the tolerance of the skin and intervening tissues.

Three factors determine the fraction of the radiation reaching the skin which penetrates to the tumor.

below is (1) the inverse square law (2) the absorption of radiation by the tissues, and (3) the effect of secondary radiation.

The first factor is a question of solid geometry only. Its magnitude does not depend upon the kind of roentgen ray used. The other two factors differ in magnitude for different kinds of roentgen rays. In general, tissues absorb less radiation if the wave length is short than if it is long. Secondary radiation also depends upon the wave length. If the wave length is short, a larger amount of secondary radiation will reach the tumor than if the wave length is long. It is therefore a problem of great importance in deep roentgen therapy to produce roentgen rays of short wave length.

The practical solution of measuring roentgen ray wave lengths, the determination of just what wave lengths a roentgen tube produces when operated at certain voltages, the effect of interposing absorbing materials or filters in the path of the rays, the variation depending upon the mode of exciting the tube, the differences produced by using tubes with anodes of various metals, are problems with which the author has concerned himself for a number of years. Much of the research work along these lines is described briefly.

Since many factors enter into the production of the beam of roentgen rays, the roentgenologist should use some method of measuring the radiation. In estimating the dosage instead of trusting to measurements of plate current, filtration, and focal distance. The use of an ionization chamber for this purpose has proved satisfactory. The author describes this chamber and the method of using it. The present methods of measuring roentgen ray intensities and wave lengths are much more accurate than those employed in the determination of the biological effects produced by the rays. Because of the increase in the accuracy of estimating dosage the roentgenologist now possesses a method

of treating certain types of disease that is not called in question in any other branch of medicine or surgery.

ADOLPH HARTZ, M.D.

Levin, I. The Intraperitoneal Insertion of Buried Capillary Glass Tubes of Radium Emanation. Results in Two Cases of Tumor of the Gastro-Intestinal Tract. *J Am Med Ass* 9, 1919, 3074.

The burying within tumors of capillary glass tubes containing radium emanation is a comparatively new departure in radium therapy. In the course of the last two and a half years the author has used this method extensively in cases of intraperitoneal tumors of the gastrointestinal tract, the uterus, and the ovaries, and in the treatment of retroperitoneal tumors. An exploratory laparotomy is performed. When it is found that the tumor cannot be completely removed by operation the emanation tubes are inserted into it and the necessary palliative surgical procedures are then carried out. The laparotomy incision is sutured immediately.

Two cases are reported in detail. One was a case of obstructing tumor in the second portion of the duodenum, and the other a case of tumor of the transverse colon. In both cases the obstruction was removed in large part and the patient's condition markedly improved.

The method is still too new to warrant conclusions as to its final results in cancer, but its efficacy is evidenced by the results obtained in the two cases reported in this article and several others which will be reported later. Following its use the patient makes an uneventful recovery and there is no rise in temperature and no peritoneal irritation or subsequent sloughing of tissues. The insertion of radium emanation does not add in the least to the hazard of the operation. The tumor diminishes in size considerably in the course of from six to eight weeks.

ADOLPH HARTZ, M.D.

# GYNECOLOGY

## UTERUS

Hietzeberg, A. A Improved Method of Supporting the Bladder and Vagina After a Radical Hysterectomy for Proliferative. *Am J Obst & Gynec* 1913, 14, 634

In the operation described the uterus is removed in the usual manner and the broad ligaments are ligated in section lower than the tumor. The uppermost ligature includes the uterine end of the tube and round ligament.

If the tubes and ovaries are removed, the infundibulopelvic ligament is drawn over and its inner end included in the ligature applied to the uterine end of the round ligament.

The upper stump of the broad ligament thus formed is then brought across the median line of the pelvis so that the stump of the left ligament may be sutured to the cut edge of the right vaginal wall and the stump of the right ligament sutured to the left vaginal wall. The stumps are not brought into the vagina but are inserted into a pocket external to the upper end of each lateral wall of the vagina.

The traction made upon the vagina will thus be carefully guided. It is directed by drawing down the ligament, determining its length and tension, and selecting the point at which it should be sutured to the vaginal wall. The suture employed for securing suture includes with the broad ligament stump about one fourth of the circumference of the opening of the vaginal wall on each side and supports and contracts the vaginal wall. The sutures on both sides are pulled before either is tied. While traction is made upon both ends of each suture the ligaments being drawn into the position they are to occupy the end of the posterior vaginal wall is sutured to the posterior surface of the interspersed ligaments. After the resection the upper edge of the anterior vaginal wall is sutured to the anterior surface of the ligaments.

The advantages of crossing the broad ligaments and all things each of them the vaginal wall of the opposite side are that a shelf is formed for the bladder, the opening of the vagina is closed by means of oblique traction upon the walls and dilation of the vaginal wall and consequent lessening of the support of the base of the bladder are prevented.

E. L. CORVALL, M.D.

Corvallis, J. A. Statistics and Technique in the Treatment of Fibromyoma of the Uterus by Radiotherapy. *Am J Roentgenol* 1913, 14, 8

The object of this study is to outline the procedures employed in treating fibromyoma of the uterus and hemorrhage from other benign causes to present a series of statistics giving the effects of

the treatment on the symptoms and lesions, and to discuss the symptoms which might be ascribed to the methods used. The study is based on 190 cases of such tumors, etc. treated between June, 1912, and July 1, 1913.

Stress is laid on the importance of preparing preliminary to the treatment and the proper selection of cases. Radium is used if the woman is over 35 years of age and bleeding is the important symptom in the cases of younger women with a definite myoma. In such operation is contra-indicated, and in the cases of young women without myoma suffering from uterine bleeding associated with tuberculous or other serious disease in such pregnancy could not be advisable. Distention and curettage followed if necessary by roentgen ray treatment are employed in the cases of young women when it is desired to cause temporary menopause or merely to lessen the flow. As even moderate doses of radium in the uterus cause atrophic changes predisposing to dysplasia, roentgen rays are preferable. If the patient is in good surgical risk, also in under 35 years of age, if the tumor is over 5 cm in diameter if the diagnosis is doubtful (especially if ovarian tumor is probable), if there is evidence of degeneration or infestation in the growth, if there are subserous pedunculated myomata, and if the pain or urinary symptoms are the important factors, some type of removal is employed in preference to radiotherapy.

In the treatment of women 40 years of age or older radium is usually used in doses of about 7,500 to 500 mgm hrs. but the dosage is increased if the bleeding is thought to be due to alteration or if the tumor increases the distance from the radium to the ovary. A larger dosage is used also for young women when permanent menopause is desired. The radium acts on the endometrium, the uterine muscles, and the ovary. It is therefore distributed in small units in order to minimize the slough in the endometrium, and is placed well in the fundus to avoid the cervix if possible. The Donnan tubes are placed in rubber tubes with thick.

Supplementary roentgen ray treatment is given a large tumor when it is believed that permanent menopause will not result from the intra uterine application of the radium. It is used also whenever there is recurrence of bleeding, especially if the recurrence is permanent.

A general summary of the effects of irradiation shows that the bleeding either ceased or became normal in 40 per cent of the cases after one radium application and roentgen ray series within a month after operation in 10 per cent, within two months in 3 per cent and within six months (usually three) in 1 per cent. In 24.5 per cent recurrences developed, each required supplementary treatment.

or stopped spontaneously. In about 5 per cent (three cases) the treatment failed. The results were more or less the same among the different types of cases except that they were uniformly slow in tumors of large size. Dysmenorrhea ceased in all cases, showing that the pain depended on menstruation. On the other hand, pain in various parts of the body and unassociated with menstruation was not satisfactorily relieved, neither were urinary symptoms. The effect on the size of the mass varied greatly.

The immediate effect of the treatment on the patient was slight in the majority of cases. The roentgen ray usually caused nausea and slight malaise and, rarely, dizziness or vomiting. Following the intra uterine application of radium the symptoms were the same. The late effects were practically the same as those which occur during the normal menopause. These effects are discussed to some length.

The author attempted to estimate the desirability of the method by balancing the harm done with the benefits obtained in each case. Such a survey showed that the method was unqualifiedly successful in 9 per cent of the cases. In 3 per cent, more harm than good resulted, and in 6 per cent, errors in judgment or technique qualified the result.

The following conclusions are drawn:

1. Radiotherapy of a myomatous or grossly normal uterus will stop all bleeding not due to ulceration, cause myoma to shrink more or less rapidly and arrest dysmenorrhea.

2. Radiotherapy will only partially relieve urinary distress and pain not associated with menstruation.

3. As a result of the artificial menopause from radiotherapy, hot flashes are the rule and in some cases there is an increased nervous irritability.

4. In the majority of patients nervousness is diminished, probably because of the improvement in the general condition.

5. The condition of women suffering from nervous disorders may be made more comfortable.

6. Changes in secondary sexual characteristics and in sexual desire and satisfaction are negligible.

7. Blood pressure studies are unreliable. There seems to be an elevation in blood pressure in 6 per cent of the cases treated.

8. Normal pregnancy is possible after temporary menopause. ALGERIA HARRIS, M.D.

Bedard, M. What Is the Best Method for the Treatment of Uterine Fibromyomata by Means of the Roentgen Ray? *Am J Roentgenol* 9 11, 797.

Thousands of observations made in 11 countries have demonstrated the efficacy and harmlessness of roentgen therapy in the treatment of uterine fibromyomata. In questions pertaining thereto require further discussion, namely: (1) the contra-indications to the use of the roentgen ray and (2) the best method of employing them.

Toddy roentgenotherapy is contra-indicated only when surgical intervention is absolutely necessary.

The method used depends upon the choice of the portals of entry and the desirability of giving the treatment in one or several sittings. Theoretically the first point depends upon whether the operator believes the desired effect is obtained by castration of the ovaries, as maintained by most German radiotherapists, or that direct action is exerted upon the myomata in addition to the ovaries. The latter view is held by the majority of French radiotherapists and by the author this assumption being based on the progressive decrease which occurs in the size of the tumor before the amenorrhea sets in. Practically, the methods employed by the Germans and the French give the same results because the portals of entry chosen invariably encompass the myometrium as well as the ovaries.

With regard to the value of the single intensive irradiation advocated largely by the Germans, as compared with repeated smaller irradiations, the author states that a massive dose given at a single session of short duration will give a result more speedily but does not take into account the variable radiosensitivity of different persons, is not always effective or sufficient, and may cause a reaction in the form of irradiation sickness which incapacitates the patient for some time.

The giving of divided doses, as advocated by the French and by the author has the great advantage that it does not cause any marked functional trouble and therefore does not oblige the patient to alter her mode of living or give up her work. Its chief value consists in the direct action of the weekly irradiations upon the myomata which causes progressive destruction of the neoplastic tissues. By this method the total destruction of the ovarian follicles is more definitely assured and the dosage is suited to the patient's radiosensitivity.

ALGERIA HARRIS, M.D.

Davis, L. Observations on Cancer of the Uterus. *Rhod Island M J* 9 331.

Three hundred and forty-eight operations for cancer were performed in the Massachusetts General Hospital 1909 and 43 in 1910. Radical surgical removal of deep-seated cancer yields a definite percentage of true permanent cures. Recent figures reported before the meeting of the American Surgical Association last May showed 60 per cent of five-year cures in breast cancer without glandular involvement. In cancer of the lip the results are even better.

Although cancer of the uterus gives distinctive signs, it is rarely detected early. The United States mortality records for 1914 list 1000 deaths due to cancer of the female generative organs. Ninety per cent of these were due to cancer of the uterus. As the annual increase of the death rate from cancer is about 3.5 per cent, it is probable that today 1,000 women die from cancer of the uterus every month.

The precancerous cervix is not easy to describe but there are certain conditions which are generally supposed to predispose to cervical cancer. Among



the left uterine fundus and the uterus with  
invasion and retroversion. Much blood when touched  
by a uterine speculum. The uterine margin was dis-  
tinctly felt about the surrounding tissues, hard  
to the touch. Confined to one lobe, and bleeds easily  
suggests squamous cell carcinoma. The invading  
type of adenocarcinoma. However, the history combi-  
nes the cervix with little or no external involvement.

Adenocarcinoma of the body of the uterus remains  
hurdled for a comparatively long time. The results  
of total hysterectomy are therefore excellent as  
a cure, cure being obtained in about 75 per cent  
of the cases.

Squamous cell epithelioma of the cervix is  
more malignant than desmoplastic carcinoma. Eight  
cases are reported. In one of malignancy there  
was a gross growth. It required radical therapy  
better than surgery. The other does not show  
the low histological features. The treatment  
of the cervix follows the same line. In complete  
hysterectomy the removal of glands and all of  
the uterus. The treatment can be obtained  
cure in 40 per cent of the cases.

Fuller W. M.D.

#### ADnexAL AND PERI-UTERINE CONDITIONS

**Efficient Pyosalpinx Opening in the Uterine  
Bladder Operation. Case (Pyosalpinx in de-  
fibrinized blood). Operative technique. Spinal  
anesthesia.**

In the case of a girl aged 20 years, history  
of illness was diagnosed as pyosalpinx. The other  
found bilateral adnexa. On the right side.

Using the use of orange light the pyosalpinx  
showed the balloon retractor in the uterus of the  
bladder. The right uterine could not be found.  
Pressure on the swelling caused immediate relief  
of the uterus. The other performed bilateral  
pyosalpinx hysterectomy. A total hysterectomy  
found both sides. The right side with bladder. The  
patient was cured.

**Hill J. C., and Maser C. The Rubin Test and  
Its Therapeutic Application. Am J Obst &  
Gynec 1922, 14, 618.**

Of seventy women seeking treatment for fertility  
sixty-four had been pregnant. The period of  
sterility ranging from three to thirty years. On ex-  
amination of the tubes, a total of twenty-eight of the  
sixty-four cases of bilateral sterility and in five of the  
six cases of unilateral sterility. Sixty of the seventy  
women had had surgical treatment for the condition.  
Some of them had been cauterized three times. They  
had had plastic operations on the cervix, and several  
had been subjected to an abdominal operation  
apparently for retroversion. None had escaped the  
a boyancy and expense of frequent office treat-  
ments supplemented for long periods by vaginal  
douches.

The incidence of occlusion of the tubes is high  
in the women who had been subjected to opera-

tions for the relief of the sterility than in those who  
had not been operated on.

It is contended by some gynecologists that 75  
per cent of the cases of primary sterility in the  
female yield to dilatation and curettage supple-  
mented by various non-operative measures. This  
percentage the authors believe is far too high.  
4 to 5 per cent of the cases of primary sterility  
there is occlusion of the fallopian tubes, condition  
which precludes the possibility of pregnancy with-  
out recourse to an operation. The treatment of  
sterility in the female should never be undertaken  
without definitely excluding the presence of occlu-  
sion of the fallopian tubes. The test of air catheter  
is infallible. In no instance are there symptoms  
pointing to this condition.

Following plastic operation on the tubes for the  
relief of sterility intra-uterine gas inflation will  
reveal the results of the treatment and will in-  
crease the tubes patent.

One negative result is not enough to establish sterility.

Occasionally polyps in the horns of the uterus  
may occlude the fallopian tubes as well as the  
greater pressure will succeed in forcing the gas  
through. In such event a careful exploration of the  
uterine horns by means of the curette and placental  
forceps is indicated.

Very few cases of primary sterility give a history  
of recent pelvic infection. In some instances occlu-  
sion of the tubes may be due to catarrhal salpingitis.  
The latter condition has generally goes unrecog-  
nized. Its resolution is hampered as it presents  
itself by hyperemia and thickening of the mucous  
membrane, with adhesion from the mucosa, and  
some destruction of the cilia. When it subsides  
the condition is less sufficient impeded uterine  
in the fallopian tubes to cause occlusion. In such  
case the tubes may be opened by gas inflation of the  
uterus which will dislodge the mucus.

E. L. Conner, M.D.

**Schiller H. Does the Ovary or Corpus Luteum  
Control the Ovarian and Uterine Cycle? A  
Study of the Ovary and Uterus.**

Ovarian and uterine cycles are governed by the  
ovarian and follicle. The ovary is the beginning and  
the end of sexual function. It determines in early  
embryonic life the formation of the female organs  
and the female sex characteristics and later governs  
the general and biological changes during the period  
of sexual function.

The true premenstrual decidual is the result of hor-  
monal action of the corpus luteum.

Menstruation occurs because the ovary is not in  
pregnancy.

Corpus luteum extract causes hypertrophy and  
hyperemia of the uterus and tubes, but only in the  
presence of the ovaries. Theoretically its greatest  
therapeutic result should be expected in men-  
orrhagia, metrorrhagia, and hyperplasia.

J. L. Conner, M.D.

Meigs, J. V. Fibroma and Sarcoma of the Ovary  
A Report of Two Unusual Ovarian Tumors.  
*Boston M B S J* 9 2, 1877 95

The ovarian tumors reported were removed at the Free Hospital for Women in Brookline, Mass. The author states that no case of either of these types of mixed tumor of the ovary has been reported in the literature. The case histories are given in considerable detail.

The final diagnosis in the first case was endometrial polyp, trophoblastic endometrium, normal uterine cavity, multiple leiomyomata of the uterus, small fibromata of the right ovary, fibrosarcoma of the left ovary.

In the second case the final diagnosis was trophoblastic endometrium, normal appendix hydrosalpinx, bilateral malignant papillary cystadenoma with epithelium of the serous type, bilateral metastatic adenocarcinoma, fibroma of the ovary.

C. H. D. via, M.D.

### EXTERNAL GENITALIA

Rosenstein. The Formation of Vagina in Congenital Vaginal Malformation (*Zur Schenckbildung bei angeborenem Vaginaldefekt*). *Monatsschr f Geburtsh Gynäk* 9 1, 1906 76

The two procedures used for the formation of vagina are the small intestine plastic of Bald and the rectal plastic of Schubert. The latter is less dangerous than the former.

In forty-seven cases operated upon up to the present time by the Schubert technique there were no deaths. In forty-one cases in which the Bald or Mori technique was employed there were ten deaths. The Schubert operation is also much simpler than the Bald or Mori technique, being an extraperitoneal procedure performed in one stage. While the Bald or Mori technique requires vaginal operation and laparotomy with excision of the small intestine.

The author reports can be operated upon by the Schubert method. The patient was discharged with good result at the end of three-four days.

WOLFFSTUHL, Z.

Rosenthal. The Formation of an Artificial Vagina (Ein Beitrag zur künstlichen Schenckbildung). *Zentralbl f Gynäk* 1906 11

A four-year-old girl with complete absence of vagina and uterus operated upon according to the Mori-Bald or Hübner's method. A loop of small intestine 5 cm. length cut out, so that the anus and the two openings remained. Sutured with catgut. Then the mesentery of the loop was cut off, and was left into the vagina. The upper end of the loop was sutured into the vagina. One and one-half years later the vagina was penetrable for two fingers. It could not be reached with the finger, and there was no intertrigo.

WOLFFSTUHL, Z.

Bullock, H. A. Utero-Vesico-Vaginal Fistula. *Med J Australia* 9 4, 1909

The case reported was that of a woman 41 years of age who had been married for fifteen years and had had eight children, the youngest of which was 9 years old at the time the patient was seen by Bullock. All the births were spontaneous except the last. The last labor began suddenly with a considerable loss of blood. The patient remembered nothing regarding it except that she had been taken in a semi-conscious condition to hospital where anæsthetic was administered and was later told that the child was delivered by forceps. She was convalescent for three weeks and confined to the hospital for three months.

After this birth on July 6, 1909, she did not menstruate naturally until operated upon by the author September 10. On examination the os uteri was found to be cut off completely from the vagina. There was not the usual test passage by which a fine probe could be passed into the uterus from the vagina.

Cystoscopic examination revealed a rent on the posterior wall of the bladder which obliterated the right ureteral orifice. It was then decided to explore the abdomen through an incision in the middle line above the pubes. The fundus of the uterus was found tilted forward and bound firmly to the bladder by a hard inflammatory mass which invaded the right side of the broad ligament. The left fallopian tube and ovary were freed from the uterus and the left ureter as exposed to make certain that it would not be injured. The right ovary and fallopian tube were removed. A trace of the right ureter could be found for 5 cm. from the bladder; this portion is unobstructedly bound up in the inflammatory mass extending from the bladder into the broad ligament.

The uterus and the upper third of the vagina were removed. The remaining parts were in the broad ligament. During this step of the operation the urinary bladder was necessarily opened. The right ureteral orifice then appeared, a small sacculus about 6 mm. in depth. The right kidney was trophied. The ragged edges of the bladder were resutured and sutured together with catgut suture. The vagina which had been separated from the bladder, then closed round small drainage tube, and the peritoneum sutured.

A second rubber drainage was placed at the point where the bladder neck was sewed up adjacent to the upper end of the vagina placed in the vagina, brought through a small opening left in the peritoneum of the broad ligament, closed over the peritoneum in the manner in which the stomach is folded. Witzel gastrostomy and brought out through the midline incision in the abdomen.

Both drainage tubes were removed by the third day, and the patient was out of bed on the twenty-third day after the operation.

Cystoscopic examination on December 14, 1909, revealed phosphatic incrustations along the line of

the scar in the bladder and slight cystitis. The incrustations were freed by rubbing the cystoscope along the line of the scar and drawn off late by Higdon's evacuator.

The patient today enjoys a remarkably good health and her only inconvenience is slight chronic inflammation of the bladder which is gradually improving. C. H. D. vs. M. D.

### MISCELLANEOUS

Chase, H. C. Levator Hernia (Podendal Hernia): Report of a Case Operated upon by the Coonhied Route. Review of the Twelve Previously Reported Cases. *Ann. Surg.* 6: 571-576, 1907.

In the author's opinion the term levator hernia is not appropriate for the condition under discussion, more than the term podendal hernia. Von Winckel suggested the term subpubic hernia. Podendal hernia is separated from perineal hernia by the transverse perineal muscles.

Levator hernia may be congenital or acquired. There are three forms: (1) direct hernia or those anterior to the broad ligament; (2) indirect hernia or those posterior to the broad ligament; and (3) combined anterior and posterior hernia. In the last type the sac pushes forward under the broad ligament and breaks through the levator muscle. The point of entrance of the posterior or indirect hernia is the internal iliac point of the pelvic diaphragm. Here there is no covering by the levator muscle and the rectovesical fascia is separated from the perineal fascia by only the areolar tissue. The posterior hernia is more common. In front of the broad ligament the levator muscles overlap and there is no exit point. Hence only the transverse hernia is tenacious.

The internal boundaries of the posterior hernia are the broad ligament, the rectum and the sacrotuberous ligament and imaginary line between the sides of the triangle. The anterior hernia is bounded by the uterus and bladder, the round ligament, the agnina and the transverse perineal muscles. The bony framework is the lesser pelvis.

In the posterior hernia the sac is large and definitely defined and contains the gut and the bladder or the gut, the ovary and the tube. The combined type of hernia contains both bowel and bladder. In the anterior hernia the sac is less defined and only partial because the bladder, such as its contents, is only partially covered by the peritoneum.

The posterior hernia passes downward and forward perforating first the rectovesical fascia and then the urogenital fascia. It is contained in the combined hernia formed forward and downward under the broad ligament, perforating only the rectovesical fascia and becoming anterior to the broad ligament before perforating the levator muscle. The anterior hernia passes directly downward and the ring and point of exit.

The external ring is bounded externally by the ascending ramus of the ischium and part of the descending pubic ramus, medially by the vagina, and posteriorly by the transverse perineal muscle. The constrictor crani muscle is lateral and the bicoarctatus external. The exit triangle of exit is covered only by two layers of the triangular ligament.

The posterior hernia is covered by skin, fascia and peritoneum, and penetrates the two layers of the triangular ligament. The urogenital fascia is the levator muscle and the rectovesical fascia. The anterior hernia penetrates the same structures but the peritoneum only partly forms the sac.

The exit point in the pelvic diaphragm is at the site of the rectovesical junction. The long perineal pouch of the sigmoid slides downward and becomes part of the content of the hernial sac. The loss of the partial obstruction at the rectovesical junction accounts for the intermittent rectal symptoms.

Pregnancy and parturition are the most important etiological factors. The majority of the hernia hernia or are first noted during labor or soon afterward. The trauma of difficult or an instrumental delivery may be the condition. Not a single case in the male has been reported. The youngest patient mentioned in the literature was 7 years of age and the oldest 5.

A levator (podendal) hernia always appears in the posterior part of the labium majus. The medial half of the protrusion is covered with mucous membrane and the other half with integument. The ordinary signs of hernia such as pulsation on coughing and reducibility, is noted. These factors differentiate levator hernia from inguinal and femoral hernia. Bartholomew's abscess, rectocele, and cystocele are readily differentiated.

The treatment consists in high ligation and excision of the sac and closure of the ring. In cases of posterior hernia this may be done when there is a definite sac. In cases of anterior hernia, if greater destruction of the levator muscle and fascia especially when areas have been torn away by a hysterectomy operation and ligation and removal of the sac are responsible, closure of the ring may be accomplished by transplanting a pedicled flap of the levator. Then the transplanted pedicled round ligaments to close the defect above and a pedicled flap of skin is placed to plug the subpubic triangle below.

The author gives the histories of twelve cases of podendal hernia collected from the literature and one of his own. Only one case is cured. In these cases the hernia was of the combined type. The patient was an obese, well-developed woman who had had six children and three miscarriages. The chief complaints were a bearing down pain in the lower right abdominal quadrant, the right labium, and the vagina, a sense of pressure and a bearing down feeling in the rectum and bladder on coughing or straining and a sensation suggesting that the contents of the pelvis were dropping out. The condition

developed suddenly about the fourth month of pregnancy and grew worse after the forceps delivery of a full term, normal child.

When seen by the author the hernia was the size of a fist, and the patient was three months pregnant. Operation was done in several stages. The first stage, consisting of dilatation and curettage, bilateral salpingectomy, withdrawal of the gut and bladder from the sac, closure of the hernial ring and sigmoidectomy was followed by plastic repair through a vaginal incision with high ligation and excision of the sac, closure of the slit in the levator muscle and ischioanal fascia, and perineorrhaphy. The patient made a satisfactory recovery and has remained perfectly well during the past year.

The author draws the following conclusions:

Protruding hernia, although extremely rare, should be easily recognized.

Cases should be divided into anterior, posterior or combined types as a basis for operation. Every case should be subjected to operation.

WALTER C. BRADLEY, M.D.

Mattmüller G. A Contribution to the Statistics of Carcinoma of the Genital Organs (Beitrag zur Statistik der Genitalkarzinome.) Zisch, Geburtsh. Gynäk. 922, LXXIV, 06.

The author reports on 690 cases treated at the Basle Women's Hospital from 1899 to 1908. In most of the cases the condition occurred during the forty-sixth to the fifty-fifth years of life. Carcinoma of the vaginal portion of the cervix, the cervix, the tubes, and the ovaries occurred between the forty-sixth and fiftieth years, that of the body of the uterus between the fifty-first and fifty-fifth years, that of the vagina between the fifty-sixth and the sixtieth years, and that of the vulva between the sixty-first and seventieth year.

Carcinoma of the ovary occurs most often in young women. The percentage relationship is as follows: in the vagina, 8; the vulva, 5; the ovary and tube, 7.8; the body of the uterus, 5; the cervix, 35.7; and the vaginal portion of the cervix, 58.5. The large number of vaginal carcinomata is striking, as the primary carcinoma is believed to be very rare. Also striking was the large number of cases of carcinoma of the body of the uterus. Almost one third of the carcinomata of the uterus are in the body of the uterus.

Women who have given birth to children or have aborted several times are more apt to have carcinoma of the cervix, whereas those who have never given birth to children are affected more frequently by carcinoma of the corpus. Previous gynecological diseases seem to have no influence upon the development of carcinoma. The relative rarity of endometritis in the histories of patients with carcinoma of the uterus is also striking.

An interesting feature is the period of time elapsing between the first sign of the disease and the time medical aid was sought. The author gives the average as 7.8 months but this figure is

not very accurate as he included also carcinomata of the ovary which cause late symptoms. From 1899 to 1914, the operability of the carcinomata gradually increased from 19.14 to 29.8 (during the World War) it decreased, and from 1908 to date it has increased.

With regard to the duration of the disease up to the time of death, calculations could be made only

35 cases (38 per cent). Many patients, chiefly those seen during recent years, are still living. Of the 335 women, 197 were operated on and eighty-eight are inoperable. In the cases in which operation was done, the average period of life was 19.4 months and the primary mortality 6 per cent. In the inoperable cases the duration of life averaged 5 months. If carcinoma of the cervix is considered separately it is evident that of the 147 women subjected to operation those in whom cervical operation was done lived shorter time than those with carcinoma of the cervix who were not operated on. Women operated on but not given radiation treatment lived about thirty-six months,

while those operated on and subsequently given radiation treatment lived only nineteen months. Women whose condition was inoperable and who were not given radiation treatment lived ten months, while those with equally advanced carcinoma who were irradiated lived fourteen months. With regard to each subject the author cites the statistics of other clinics for comparison. VOLK TATCHEV (Z).

Clark, J. O. and Keene, F. E. The Treatment of Cancer of the Pelvic Organs with Moderate Irradiation. *Am. J. Roentgenol.* 9, 803.

The cases reviewed were as follows: cancer of the cervix, 30; cancer of the fundus, 17; carcinoma of the vagina and uterus, four; cancer of the cervical stump, eleven; recurrent cancer of the vagina after hysterectomy, twenty-two; primary cancer of the vagina, twenty-nine; cancer of the urethra, eight; and cancer of the bladder, six. The results were poorest in the cases of cancer of the cervix. With possibly three or four exceptions the cases of cancer of the fundus are inoperable, judged clinically but as compared with cases of cancer of the cervix they showed the same favorable difference in the results of treatment as is noted in the surgical treatment of lesions of these parts of the uterus.

Of the patients treated over four years ago for inoperable carcinoma of the pelvic organs 63 are dead, thirty-five (56 per cent) are living, and seven have not been traced. Of those treated over five years ago 15 are dead, four cannot be traced, and thirty-one (9 per cent) are living and free from manifest evidences of the disease. The estimated percentage of patients treated for cancer of the cervix who are alive nearly or beyond five years after the operation is between 6 and 8. Of the 4 patients treated, the vast majority were in advanced stages of the disease, quite beyond the possibilities of surgical

intervention. A large number have had their symptoms mitigated or completely arrested for a time; the frightful hemorrhages have been arrested for invariable periods, and frequently entirely stopped. In a smaller percentage pain present at the time of treatment has been relieved. The number of cases which have been cured, is reckoned on a five year basis, as larger than expected.

On the basis of their study of these cases the authors have reached the following conclusion:

Radium in six-month periods will yield most gratifying results if properly applied.

2. To pursue a set course without variation in the frequency of treatments, regardless of the progress of the healing is hazardous.

3. To attain the best results, the first application should be made under general or spinal anesthesia as this permits a more careful examination and the radium can be brought more advantageously into contact with the malignant areas by means of radon tubes or radium needles. Q-tze packing has proved of much greater use for protection than metal shields.

4. The process of cure passes through three stages: local destruction, connective tissue formation, and hyalineization.

5. A hysterectomy after successful irradiation of an otherwise inoperable case is hazardous.

6. The results of irradiation in cancer of the cervix may remove this class of cases from the surgical field.

7. Cases of cancer of the fundus, unless too far advanced, or unless operation is definitely contraindicated, should be subjected to hysterectomy followed from fourteen to twenty-one days later by light irradiation of the vaginal fornix.

8. Irradiation is dangerous immediately before or after an operation, and in fresh operative fields.

9. Frequent repetitions of irradiation are probably unnecessary and possibly hazardous as the chief blow is struck at the first application.

10. The development of irradiation keratitis may be reduced to a minimum or almost completely prevented by pushing the healthy tissues away from the zone of intensive radiation by means of a stippled vaginal pack. (Source: HARRIS, M.D.)

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

Lepage. Pregnancy After Operation for Cancer of the Breast (Cancer du sein opéré et grossesse)  
*Bull. et mem. Soc. d'ob. de Par.* 9 21 11, 49

Trout recently reported fifteen cases of pregnancy following ablation of one breast for cancer. In thirteen, cancer developed in the other breast after from 1 to 10 years.

The author has observed 11 cases of pregnancy following operations for breast cancer. In both of these cancer developed in the remaining breast. The first case was that of a woman aged 30 years. Pregnancy ensued less than 1 year later and the cancer from which the patient died developed within the following six months, i.e. in the sixth month of pregnancy.

The second case was that of a woman 43 years old. One and one half years after a thorough radical operation the patient became pregnant and within six months cancer developed in the remaining breast and resulted in death.

These two cases fully bear out the findings of Trout, the only difference being in the earlier incidence of pregnancy and the consequently earlier recurrence of the cancer.

The author concludes that women who have been operated upon for cancer of the breast should be sterilized, preferably by radiation of the ovaries.

R. A. BERRY

## LABOR AND ITS COMPLICATIONS

Watson, B. P. Further Experience with Pituitary Extract in the Induction of Labor. *Am. J. Obst. & Gynec.* 9 15 603

In the 95 cases in which pituitary extract was used to induce labor the result was successful in 90 per cent. The maternal mortality was nil. There were no cases of laceration of the cervix and no greater incidence of pelvic floor lacerations than in ordinary labor. There were 11 cases of retained placenta and 11 cases of rather severe hemorrhage accompanied by shock following the expulsion of the placenta. The latter were cases of primiparae over 30 years of age. The number and nature of these complications was no greater than the like number of deliveries in which no pituitary extract was used.

There were 11 fetal deaths. Fetal death rate of slightly over 6 per cent. Three of these babies were monsters. 1 died in utero apparently from placental infection due to pregnancy toxæmia. Three died of cerebral hemorrhage and two of tetanosis within three days of birth. In two cases autopsy was not permitted. Taking into consideration the nature of the cases in which induction was

carried out the result so far the fetal death rate is concerned compares favorably with those obtained by other procedures.

A great deal has been read and written regarding unfavorable effects on the mother from the administration of pituitary extract in the course of labor. In practically all such cases, however, the drug was incorrectly given. Pituitary extract should be used in the course of labor for one purpose only, viz. to stimulate uterine contraction when it is markedly in dequate.

To give pituitary extract when there is a rigid cervix or in a case of delay due to a small pelvis, a large head malposition of the head or rigid pelvic floor is a court disaster. Rupture of the uterus and fetal death are bound to occur if it is used under such conditions. This is no argument, however, against its use in properly selected cases.

When pituitary extract is given to induce labor the initial dose is 1 c.c. If there is any showyness, i.e. the drug on the part of the patient it is revealed at once as in a case cited, in which severe vomiting resulted. The administration can be then stopped. If the first dose causes no ill effects, subsequent doses will be equally well borne as the drug does not have a cumulative effect. The author experiences the uterine contractions induced have been of a tonic nature. The first contraction is usually longer than the succeeding ones, but the latter are of the nature of ordinary labor pains. In most cases they begin to die away in fifteen or twenty minutes and must be further stimulated by another dose of pituitary extract. If contractions can be kept up sufficiently long to start dilatation of the cervix and separation of the lower pole of the membranes, the labor will proceed naturally thereafter.

F. L. CORRELL, M.D.

Beck, A. C. Is Interference Justifiable After Twenty Four Hours of Labor When No Other Indication Is Present? *Am. J. Obst. & Gynec.* 9 63

As the private patients in the group studied were treated by a number of different men and no definite plan as followed in the care of the prolonged labors, only the service cases were considered from the standpoint of the end results. In the 1,138 general service cases there were seventy nine long labors. All but three of these ended in spontaneous delivery. 10 forceps were used in six cases, either because of marked bunge in the fetal heart rate or prolonged second stage. In breech extractions were done for the same reasons, and in five cases of relative disproportion in which the head failed to engage after thorough test of labor mechanism section as done. Three stillbirths and the deaths

of three infants on the first, fourth, and fifth days, respectively, made the infant mortality 7.6 per cent. One mother died on the third day after a cesarean section. Addition of proof of the value of cesarean section is shown by the end results in the entire series. Of the 2,125 deliveries which included this group of seventy-nine prolonged labors, twenty-one resulted in stillbirths and four in were followed by the death of the child. Within the first 24 hours a total infant mortality of thirty-six (1.6 per cent). Two mothers died, maternal mortality of one in 560 cases.

From the fact that in many of these cases of prolonged labor the head is not engaged after twenty-four or even thirty hours of labor the author concludes that manual dilatation or incision of the cervix and forceps delivery would not have given good end results, those obtained.

Of the series of women studied 741 were engaged in the Long Island College Hospital and Out Patient Department. One hundred and forty-nine labors lasted over twenty-four hours. Of this number 45.2 per cent terminated in delivery after twenty-four hours, and 54.8 per cent continued for more than thirty hours. Of the 550 Cesarean in the hospital series, 204 (37 per cent) were in labor more than twenty-four hours. Slightly over one-fourth of the 266 dry labors are prolonged.

Early rupture of the membranes seems to be the most common etiological factor. The exact cause responsible for the long labor in the rest of the cases is not known. The study of individual cases indicates that the chief difficulty is fully uterine contractions.

In the conduct of labor the author gives the patient as much rest as possible. Her pulse and temperature and the fetal heart rate are carefully noted. Comfortment is given as frequently as the patient can be forced to take it. If the uterus is between contractions she is urged to rest and, if possible, to sleep. As soon as the membranes rupture if the cervix is full or almost fully dilated a good abdominal binder is adjusted and the patient's efforts are encouraged. This routine, which is followed in all cases, is excellent in cases of long labor. It conserves the patient's strength for the second stage. The only additional measure employed in a prolonged labor is the administration of liberal doses of morphine. Whenever the character of the contractions show that the uterus is fatigued sufficient morphine is given to stop the labor and allow the patient to sleep.

Nearly all women who show relative disproportion will deliver spontaneously if they are allowed thorough rest of labor.

Seventy-four of the infants in the series weighed 4,000 grams or less. Inductions could have been necessary if a larger child had been required indication for such interference.

The large number of spontaneous deliveries occurring after rest of labor and the low infant and maternal mortality proved that Cesarean section was fully restricted. F. L. CORNELL, M.D.

Holmes, R. W. and Burdick, A. L.: The Test of Labor I: Relation to Cesarean Section. Comparative Results Obtained by Elective and Secondary Operations Based upon Personal Experience of Ninety-Two Cases. J. O. G. & Gynec. 9: 31-379.

There is comparatively little difference in the safety of operation performed in advanced labor, before the advent of exhaustion, over that of operation performed in the last days of pregnancy. The danger depends on the management of the case before and during the hours of labor. The judgment of the surgeon, the technique used, and the character of the personnel of the operating room influence the outcome as much as any aid, external or internal, renders incident to the labor. Within certain limits the duration of labor is of comparatively little importance, but vaginal examinations and attempts at delivery from below are dangerous, as is also protraction until the vital forces are at the lowest ebb.

Prolonged rupture of the membranes often means mention to the patient's effort during the postoperative period. The woman who has truly elected operation still has a more placid and is finally more comfortable convenience than woman who has been subjected to hours of distressing labor. It is essentially true that those given the test of labor still have the same elevation of temperature, those who have the elective section, but in the former the increase will continue longer than in the latter, fact indicating lack of rest to the incident to fatigue. The longer the woman is in labor with membranes ruptured, the higher the pulse rate and the more prolonged the elevation of temperature as compared with women not in labor or with membranes intact. Further it is death evident from the study of ninety-four cases that to 20 per cent of women operated upon in labor will run more stormy course with somewhat prolonged thermal elevation—a true though acid aptly course—especially if the membranes have ruptured the chance picture being distinctly one than that in cases operated upon electively.

The danger of rupture of the perineal seal is not slight. The authors agree with the doctrine, once a cesarean, always cesarean.

They have firmly adhered to the principles of the lower section with only minor deviations. There fore under conditions dictating otherwise they always enter the uterus through as small an abdominal incision as possible.

The following conclusions are drawn. The adoption of modern surgical principles has been the most important factor in reducing the risk of cesarean section to the present minimal point.

The second great factor in lowering the maternal mortality is abstinence from vaginal examinations.

A third of great importance in increasing the safety of sections is the routine employment of rectal touch.

4. The possibility of section should be clearly and definitely determined in pregnancy and in every step in the conduct of labor this possibility should be borne in mind.

5. An absolute pelvic deformity demands section before labor begins and at a set hour.

6. The woman with relative disproportion should be given an adequate test of labor unless this is definitely contra indicated.

7. The test should not be so prolonged that it causes the faces of exhaustion or abnormal increase in the pulse rate or temperature.

8. Prolonged rupture of the membranes has very injurious effect upon woman in labor if labor is unduly prolonged after the rupture. Stomach contents are probable in 1 per cent of the cases and fatal outcome in an occasional case.

9. If section is performed slow long labor with weak and irregular contractions is not so dangerous as shorter but violent type of labor.

I. All probability a hard labor liberates protein bodies or other by products of forced metabolism which are inimical to consciousness following cesarean section.

A cesarean section performed before labor is almost certain to be successful and associated with minimal physical distress if performed by skilled hands.

Labor increases the physical distress and jeopardizes the consciousness.

3. Above all things, prolonged labor with prolonged rupture of the membranes, vaginal examinations, or futile attempts to deliver from below is disastrous.

4. Cesarean section is far more dangerous for the woman than spontaneous labor or somewhat difficult operative delivery.

5. The sum total of discomfort associated with cesarean section is as great as, or greater than, the inconveniences and pain of labor.

6. Because of the facts cited and the increased mortality section should be done only clear indications.

L. I. CORNELL, M.D.

Hirst, J. C. and Van Doherty, W. W. Cesarean Section: Its Indications and Technique Based on 252 Operations. *J. Am. Med. Ass.* 1915, 304.

Following a brief summary of the indications for cesarean section the authors state that the rules are in direct ratio to four factors: (1) the length of time the patient has been in labor; (2) the length of time the membranes have been ruptured; (3) the number and technique of vaginal examinations; and (4) previous attempts at operative vaginal delivery.

The operator must choose to fit the requirements of the particular case one of at least five different techniques: (1) the old classical operation with long abdominal incision and eversion of the uterus before it is incised; (2) the classical operation with short, high abdominal incision with emptying of the uterus *in situ* and then eversion for suturing; (3) the extraperitoneal or low cervical cesarean section following the method of Beck; (4) the Porro operation with dropped cervical stump; and (5) the Porro operation with manipulation and drainage of the stump.

The indications, the advantages, the disadvantages and the technique of each type are discussed. After the operation the head of the bed should be raised 30° and daily vaginal douches with sterile water should be given.

The dictum once cesarean always cesarean is not true unless the indication is a permanent condition. Rupture occurs in subsequent pregnancies in less than 3 per cent of the cases. In the series of unselected cases reviewed the mortality was 3 per cent.

ROY E. CANNON, M.D.

## PUERPERIUM AND ITS COMPLICATIONS

Williams, P. F. Postabortal Hemolytic Streptococcosis. *Am. J. Obst. & Gynec.* 9, 636.

Four cases of postabortal hemolytic streptococcus bacteremia ending in recovery under the use of polyvalent antistreptococcus serum are recorded. Illegal instrumentation to cause abortion is considered the chief etiological factor of such infections. The dangers of non aseptic procedures are evident from the fact that of a series of 100 women seven were found to harbor the hemolytic streptococcus in the cervical canal, and eleven others showed non hemolytic types of streptococci. A prompt diagnosis of such febrile conditions is best made by blood cultures. Cervical cultures if they are positive and show the same organism as that recovered from the blood stream are of value in supporting the diagnosis made from the blood findings.

Serum must be given early and in repeated doses, ranging from 50 to 100 cc. depending upon the clinical and laboratory findings. Reaction is the rule and vary from mild to severe chills and skin rashes. 1 cases of severe reactions desensitization may be necessary.

The action of the hemolytic streptococcus on the circulating blood is not as severe as might be supposed. The cases reported showed little pelvic disease the most noteworthy findings being slight peritonitis and parametritis.

L. I. CORNELL, M.D.



# GENITO URINARY SURGERY

## ADRENAL, KIDNEY AND URETER

W. Rupert C. M. Brown, T. H. and Delcher H. A.  
Abnormalities of the Kidney and Ureter. A  
Case of Double Kidney and Double Ureter  
with a Review of the Literature. *J. Urol.*  
9 2, 14 450

In a few cases reported there were two kidneys on the same side and some there was third ectopic kidney. Double kidneys vary from the ectopic type (kidney composed of two parts separated by connective tissue).

In no instance are there two ureters opening from a single pelvis. The pelvis are usually placed one above the other rarely in one toward in front of the other. The lower pelvis is usually larger than the upper. As a rule the portions of the kidney drained by the two ureters are unequal in size. In most cases the external form of the kidney is normal and duplication may not be suspected. Always there is a distinct band separating the parts of the kidney. In some cases the ureters may run a distinct course and have double openings in the bladder or one ureter may open into the bladder and the second into some other part of the genito-urinary tract. In other cases the ureters may come together and enter the bladder by a single orifice.

The bifurcation of the ureters may be near the kidney but is usually within 1 to 5 cm. of the bladder. When the ureters are closely associated, the ureter which drains the upper part of the kidney is posterior but in very part of an anterior position before entering the bladder.

The authors give the types of ureteral duplication as follows:

Unilateral duplication complete or incomplete depending upon whether the ureter has one or more openings into the bladder.

Bilateral duplication complete or incomplete depending upon the number of ureteral openings.

Forty cases of complete bilateral duplication were collected. There are 9 cases of incomplete bilateral duplication, 18 cases of complete unilateral duplication, and 133 cases of incomplete unilateral duplication.

The authors summarize the data of 38 cases of complete or incomplete unilateral duplication in a table.

In the literature the authors found reports of the bifurcation of a single ureter near its lower extremity. There are a number of cases in which the suprapubic ureter opened in an abnormal situation, the bladder or extravesically. Most of the reports are copy reports. In a fair number of cases the condition was discovered during operation. In only few was the diagnosis made before operation.

Improved urological methods have made diagnosis possible in every suspected case. The authors suggest that pyelograms be made in every case in which there is the least suspicion of the condition. An abnormal organ is more susceptible to pathological changes than normal organs. A very large number of double kidneys show disease. In double kidneys with double ureters hydronephrosis and pyonephrosis are very common. These conditions were found in only thirteen in twenty-nine cases in which a normal operation was done for double kidneys. The percentage of the operations were nephrectomies. The resection of one portion of a double kidney has been done successfully by many operators. This includes resection of tuberculous half of double kidney. The authors find that the diseased part of the kidney is almost always the upper part. The lower half is usually of normal shape and the ureters discharge normally.

One observer found that when the duplicate ureters have neighboring orifices the kidneys do not show visible alteration, while if one orifice opens abnormally the part of the kidney corresponding to this orifice is usually diseased.

The origin of the known anomalies is very obscure. None of the explanations advanced to date seems to account for the predisposition.

The authors conclude their article with the statement that the point of importance for practical purposes is that these anomalies occur with the greater frequency than is generally believed and therefore should be borne in mind in the diagnosis of urological conditions. *Clinical J. Urol.* 5, 240.

Crabtree F. G. The Nature and Significance of Renal Stasis. *Surg. Gynec. & Obs.* 1922, 135, 731.

As a result of his investigations, Crabtree concluded that the consideration of renal stasis from the physiological rather than the pathological point of view might reveal facts bearing on the treatment of this condition. By this he means determining whether the kidney is hampered in the elimination of urine from the pelvis rather than whether there is dilatation sufficient to cause hydronephrosis. He believes it is wrong to rely in the diagnosis entirely upon the pyelogram to the exclusion of data obtainable by the cystoscope and ureteral catheterization. As a result of such exclusion, beginning dilatations and small hydronephroses are often overlooked. It is time when remedial measures can be best applied.

Crabtree defines "pelvic content" as the amount of urine present in the pelvis. The term "pelvic capacity" is defined as the amount of urine which the pelvis can hold when the catheter is inserted into the pelvis.

indicated by the amount of fluid which can be injected into the pelvis up to the quantity which causes pain and then withdrawn the amount withdrawn is not the amount injected represents the capacity.

There are four types of renal stasis between the normal kidney and the large hydronephrosis: (1) acute stasis, (2) subacute stasis, (3) intermittent stasis, and (4) relative stasis.

**Acute stasis.** This condition the author believes is almost entirely an emergency condition, occurring most commonly with stone but also following accidental ligation of the ureters, the plugging of the ureter by a blood clot during an cut (tack) of pyelonephrosis, and in cases in which the cystoscope was used during acute pyelonephritis. Even though the obstruction is complete it is not serious in its after-effect as the kidney generally returns entirely to normal when the obstruction is removed.

**Subacute stasis.** By this term the author refers to cases of partial obstruction in which back pressure and over distention of the kidney continuing for period of weeks or months. As an example is mentioned the back pressure kidney of pregnancy. He has observed cases in which rates of 300 to 300 c.c.m. decreased to 15 c.c.m. at the termination of pregnancy. Further distention may result however from the progress of the disease without the intervention of subsequent pregnancies. Another type of subacute obstruction is that due to ureteral stone.

**Intermittent stasis.** The two most common causes of this condition are renal mobility and supernumerary vessels. Renal mobility is probably intimately associated with aberrant arteries in all cases in which pelvic stasis results. The great majority of palpable kidneys are functioning normally in spite of some degree of mobility but the greater incidence of pyelonephrosis, hydronephrosis, persistent pyelitis, and renal pain on the right side as compared with the left in the female as compared with the male and in the adult as compared with the child, points to significance in these anatomical differences. It indicates also that renal damage is a progressive condition.

**Relative stasis.** By this is meant apparent obstruction to the outflow of urine. This condition may be present without symptoms. The function of the kidneys is usually good and there is no thinning of the cortex indicating serious back-pressure. The ureterovesical valve is often competent, and the injection of fluid into the bladder results in its reabsorption into the kidney pelvis. The condition is probably congenital. HERMAN L. KUTCHNER, M.D.

Barney J. D. The Question of Recurrent Renal Calculi. Surg. Gynec. & Obst. 9, xxx, 743.

The author calls attention to the paucity of the literature on recurrent renal calculi. This subject is unpopular because of the long and patient labor which the accumulation of data involves, and be-

cause of the disappointing results revealed by the investigation. Barney believes that in study of these cases it is necessary to examine the patient personally, the patient's statement by word or letter being insufficient.

The recent investigation of cases in the Massachusetts General Hospital showed unsatisfactory results. Of seventy cases of nephrotomy the results are known in thirty-five. Of sixteen cases in which roentgen examination was made, fourteen showed the presence of stone on one or both sides. These figures would be greater if all cases had been checked up by the X-ray. Many were unquestionable cases in which stones were left at operation. Of the cases of stone admitted to the hospital sixteen had been previously operated upon for renal calculi, and of this number twelve (75 per cent) had been operated upon on both sides.

In recent investigation regarding recurrences postoperative roentgenograms were made in twenty cases. In nine (45 per cent) the films showed a stone still remaining in the kidney. In the absence of such postoperative roentgenograms, which clearly demonstrate the author's point that stones are frequently overlooked during operations, these stones would have been recorded as recurrences if found at a later date.

The various causes responsible for failure to remove all of the stones, and the aid given by the fluoroscope at the time of operation are discussed. The author's conclusions are as follow:

As there has been little investigation regarding recurrent or overlooked renal calculi it is desirable that various observers in different clinics undertake such an investigation.

A roentgenographic examination made during or very shortly after convalescence is essential for the accuracy of the results in such study.

While the few data at hand show that stones are found in the kidney after operation in surprising number of cases, it is impossible to state which of these stones are recurrences and which are stones left at operation. Unquestionably recurrence is very frequent.

The complex character of the interior of the kidney hampers the removal of stones, and the comparative inaccessibility of this organ in many cases contributes to the difficulty of removing all stones.

Although various procedures may be resorted to for this purpose none is infallible. It would appear that the fluoroscope offers the most promising prospects for success.

Pre-operative study cannot be too painstaking, nor must the possibility of superimposed shadows of calculi be overlooked.

A second operation for the removal of remaining stones is advisable in most cases and should be done soon after the first operation.

Nephrotomy is unquestionably the operation of choice and is often advantageously combined with partial nephrectomy.

HERMAN L. KUTCHNER, M.D.

Hofe O. Obstruction of the Common Bile Duct and Anuria Due to Solitary Cyst of the Kidney (Cholelithen erkrankung und Anurie durch Solitär cyst der Niere) *Munchen med Wochenschr* 9. Jg., 179

Solitary cyst of the kidney are rare. Their symptoms are usually light but they may cause severe disturbances by pressing upon the urinary passage or the neighboring organs. Hofe reports a case in which a tumor the size of fists in the right upper part of the abdomen of woman 36 years old proved at operation to be solitary cyst of the kidney. The growth had caused displacement and torsion of the right kidney and ureter and through pressure upon the excretory biliary passages was responsible for the development of chronic icterus. *Korw* 10 (7)

Oehlecker F. The Partially Transperitoneal and Partially Extraperitoneal Operation on the Kidney. Extraperitoneal Operation After Elimination of the Peritoneal Sac (Die teiltransperitoneale und teil extraperitoneale Nieroperation ohne peritoneale Operation als Verleinerung des Peritoneumsackes) *Flück* 7. Jg., 649

Transperitoneal nephrectomy lies behind a all extending through the peritoneum, i.e., it hinders the free to incarceration of the intestine. With the author's modification of the operation the separation in the incision is only as a model and the abdominal space is somewhat diminished. Before the true kidney operation is performed the abdominal cavity is completely closed by suturing the parietal to the parietal peritoneum on the medial side. The operation is then performed without entering the peritoneum. Lumbar drainage is instituted.

This operation is recommended especially for cases in which the kidney is in a high position and for obscure cases. It is begun with a parietal incision. *Verh. Ver. Chir.* 11

Fritzsche H. D. Suprarenal Glands with Intracapsular Operation. *J. Clin. Med.* 9. Jg., 405

Duplication of the ureter is common in formation but a supernumerary ureter with an extra vesical opening is rare. A review of the literature shows that fifty-one cases of this malformation have been reported prior to the present time.

Of the several theories discussed in the double ureter the most plausible is that there is a separate origin from the Wolffian duct. In the process of downward growth the low ureter reaches the bladder first, usually here the normal ureter is found while the upper ureter continues to descend and shifting with the old duct mesial to the first attached ureter until it reaches the urogenital sinus. The Wolffian duct about the ureter continues to shift to still low level. If the ureters are liberated in quick succession they will be found close together in the bladder but if the

are liberated at different times they will be farther apart so that the upper ureter may be found even above the internal urethral orifice. The potential points learned from this embryological study are:

1. A double ureter may unite at any point between the bladder and the kidney and empty into the bladder as a single tube.

2. When there are two separate openings the distance of the ureters are distinct in their course to the bladder.

3. The ureter opening most readily comes from the cephalad portion of the kidney and that lower the lower pole occupies the normal position in the bladder.

4. When the ureter opens into the urethra, the urethral opening is always on the floor.

5. When the ureteral opening is in the vagina it is on the anterior wall and never on the lateral wall.

6. The ureter empties into lowest corner and lies to the inner side and behind the more normally located ureter.

7. In the female the ureter may empty into the vagina, the tube of the vagina, fallopian tube, uterus, or Clavert's duct.

When the opening, the lower end of the ureter has usually been dilated, either as a small sac or as a fistula or as a long tube, it usually contains the distal end extended to the kidney which is found to be trophic in the part drained by the supernumerary ureter.

The renal history given is that of constant dribbling, light and dark urine, in addition to renal colic. In few patients control is fairly good but is occasionally weakened by child bearing. It is noteworthy that in most instances the condition remains unrecognized until adult life. Given the fact that the renal tissue drained by the supernumerary ureter is almost never palpable out of time, it is very feeble. When the condition is suspected and simple inspection does not reveal the opening, the patient should be given indigo-carmin intra-venously and pledges of catheter should be placed in the urethra and catheter. If sufficient dye is excreted the ureter is located.

Locate the location of the opening. If the patient is fairly the patient should be given three or four gr. doses of methylen blue and re-examined the next day. Lymphography will locate the orifice in the urethra. In the X-ray plate the upper portion of the kidney may be found irregular in contour and in the pyelogram the upper calyx may be missing if the kidney had a pole.

In the cases reported the following operations have been done: (1) ligation, (2) anatomical of the dilated end of the ureter and the bladder, (3) implantation of the ureter into the bladder, and (4) resection of the upper pole of the kidney. For cases in which considerable amount of renal tissue is drained by the accessory ureter the author advocates the removal of the accessory ureter and there is no



Ackner P W Primary Tumors of the Uret  
Surg Gynec & Obst 9 1922 1)

Forty-seven cases of primary epithelial tumors of the ureter collected by the author are grouped as follows: (1) papilloma 12, (2) erythrocytic (3) papillary carcinoma 12, (4) (5) non papillary carcinoma 14.

In four of the cases of Group 3 the growth was a squamous-cell carcinoma, and in ten a carcinoma scabrous medullare. The author reports a case of combined squamous cell carcinoma and leucoplakia. Kretschmer has collected forty-four cases of leucoplakia of the urinary tract.

The author's patient was a man 35 years of age. Urinary examination three weeks after the onset of symptoms showed few shadows in the right kidney region. The urine showed pus and few red blood cells. Urine from the right ureter showed a large quantity of pus and 1.03 per cent urea content. There was no secretion of indigo, and bacterial cultures were negative. The urine from the left ureter was clearer and more concentrated. Indigo was excreted in 15 to 20 minutes. The urea content was 0.9 per cent. Bacterial cultures were negative. A pyelogram was not made because of the patient's poor general condition.

Thirty per cent of phthalein was excreted in 10 hours. Analysis of the blood showed urea nitrogen 26.6, non-glabile nitrogen 74.7, creatinine 4.1, and creatinin 4. The Wassermann test was negative.

At operation the right kidney was found to be its normal size. The greatly enlarged pelvis was opened and three stones and several masses of fibrous exudate were removed. The fourth stone was removed through the cortex.

The thickened and structured ureter opened at junction incised and section removed for examination. On culture, the fluid in the pelvis yielded hemolytic streptococci. Section showed squamous cell carcinoma. Six days later the kidney and ureter were removed in the technique described by Beer.

When the kidney was split, the pelvis was found to be small. The lower part showed leucoplakia. At the ureteropelvic junction the tumor was circular and 1.5 cm in length. Subsequently radium treatment was given for leucoplakia of the bladder. The patient did not react well and died of uræmia soon afterward.

The diagnosis of ureteral tumors is difficult. If the tumor is mobile and if bleeding occurs from the ureter during the cystoscopic examination the diagnosis is fairly certain. A retrogram may be of aid when the tumor is not mobile. Structure and calculation must be excluded. If the urine has bleeding obstruction is clear it is suggestive. The persistence of hematuria after the removal of tumor of the bladder is also suggestive. In only four cases in which the tumor was concealed as the diagnosis made before operation.

C. D. PIERCE, M.D.

## BLADDER, URETHRA, AND PENIS

Schwarz, O. Investigations of the Physiology and Pathology of Bladder Function. Abstracts on the Pathology of the Urinary Tract. (Lernzettel über die Physiologie und Pathologie der Blasenfunktion zur Pathologie des Harnsystems. Festschrift für C. 1922 17)

Disturbance and retention may be present when the prostate is of a large size or smaller and though it is normal in structure and shows no signs of reduction. In such cases a mechanical obstruction to the outflow of urine is ruled out but the elasticity of the gland gives complete relief. The author explains the fact by the assumption that small nodules of adenoma exert tonic limitation upon the sphincter which then becomes the immediate cause of the disturbance of function, just as an ulcer near the pylorus constrains the pyloric space. The importance of the middle lobe as a cause of mechanical obstruction is greatly overestimated.

The author distinguishes three types of cases of contraction of the neck of the bladder. In the first type there is deposit of newly formed connective tissue strands deep under the mucous membrane, which forms a fibrous tight ring around the neck. The etiology is unknown, but there is another point to consider, connective tissue induration of the sphincter. The second type is characterized by pronounced chronic inflammatory induration of the glandular and muscular tissues in addition to the other changes mentioned, the bladder not being transformed into a rigid tube and the mobility of the sphincter limited. In cases of the third type there is hypertonia of the sphincter but the urethra is easily passed by the thickest instruments. This is permanent hypertonia of the sphincter muscle is that which often persists after special disease.

The treatment of all these forms is stretching or the incision or excision of a segment of the sphincter by the transurethral route. This operation is always successful. Frequently the coeloculus can be easily made visible in the cystoscope when the bladder is fully normal, the conclusion may be drawn that this phenomenon has no relationship to relaxation of the sphincter but may be produced in every case by the cystoscope as a reflex excitation of the sphincter. The free communication of the posterior urethra with the bladder is a functional phenomenon, it is not permanent but persists during the examination. Below using the cystoscope it is possible, without waiting for some time to illuminate the posterior urethra for considerable distance and thus to bring the coeloculus into view. The cystoscope exerts an irritating action upon the sphincter causing it to relax.

104 TAVELAND (2)

Kretschmer H L Thirteen Years of the Bladder. A Further Report. Surg Gynec & Obst 1922 255 759

Kretschmer has added nine cases of chronic stricture of the bladder to his series, making a total of four cases. He has reviewed all of his cases to determine

whether the treatment given is justified by the end-results.

The etiology of the lesion is still vague. Of 8 cases collected, including Hünner's fourteen, only twenty-nine were those of males. Twenty three of the latter were reported by Frota. Five of the author's patients had never borne children. Their ages ranged from 24 to 60 years. Thirteen had had previous surgical operations, nine of which were for the urinary symptoms. The duration of the symptoms ranged from eleven months to seventeen years. All of the patients were thoroughly examined for infections in other parts of the body.

Of the symptoms, two were noted in every case, namely frequency and pain. The pain was constant or present only during micturition. Hematuria was present in six cases and was increased when the bladder was over-distended. Urgency, burning, tenesmus, and backache were variable symptoms.

In thirteen of the fourteen cases accurate records of the urine were obtained. The urine was normal in only one. In seven cases it contained pus. In five cases the urine from both kidneys was sterile, while in three only that from one kidney was sterile. In the others, cultures showed the presence of bacillus coli, streptococci, staphylococci or diphtheroid bacilli. The diagnosis was made by exclusion.

Sections made of all tissue removed confirmed the diagnosis. The mucosa and submucosa were chiefly involved, the muscle very little.

In one of the eight cases operated upon recurrence developed, and in another the urine again showed pus and staphylococci. Two patients are freed of symptoms by fulguration. Two are no longer under observation, and two are improving without treatment.

C. D. FICKER, M.D.

### GENITAL ORGANS

Felber, L. Experiences with the Perineal Operation for Prostatic Abscesses and Prostatic Stones (Erfahrungen mit der perinealen Operation der Prostataabszesse und Prostatensteine). *Zeich. f. med. Chir.* 9, 11, 390.

The other reports on the perineal operation in twenty-nine cases of prostatic abscesses and four cases of prostatic calculi (associated twice with vesical calculi). One of the abscesses was tuberculous, twelve were gonorrheal, five were metastatic abscesses (one due to the colon bacillus), one was pure staphylococcus abscess in gonorrhea, eight were abscesses in the hypertrophied prostate following a serious infection of the urinary tract, and three were abscesses following operations for hemorrhoids. The perineal operation was done twenty-seven times and the vesical operation twice.

Twenty-seven cases were cured. One patient died and one result is unknown. The rectum was never injured when the perineal route was used. The fact that this operation is done under direct vision justifies its recommendation. Prostatic tones are also easily removed by the perineal route.

LORENZ (2)

Leguen's Infections of Prostatic Adenomata (Les infections de l'adénome prostatique). *Arch. d. med. et. reuss. et d. organes génito-urinaires* 9, 1, 29.

In the past years Leguen has seen several cases in which the patient showed symptoms of acute retention which were followed in a few weeks by the development of an abscess. A perineotomy was done, but as this did not put an end to the complications arising from the urinary retention, Leguen was obliged to perform prostatectomy in one or two stages. The cause of the retention was infection of a prostatic adenoma.

Infection of a prostatic adenoma occurs in the aged. It differs from gonorrheal infection in young persons. Gonorrheal abscesses evolve in the prostate itself or its immediate neighborhood, the glands being the point of origin. In the aged, a pre-existing adenoma becomes infected as the result of a general systemic infection.

On section the extirpated adenoma shows greenish spots, and drops of pus may be expressed from it. On bacteriological examination various organisms may be found. Two of Leguen's recent cases showed staphylococci.

A common type of case is one in which there is acute retention but the suppuration remains intra-canalicular and localized to the interior of the adenoma. A small induration, the localized abscess can be felt through the rectum. The only acute phenomena are fever and retention.

Clinically the only difference between a young patient with suppurative prostatitis of gonorrheal origin and an aged patient with adenomatous prostatitis is that the first may recover completely after evacuation of the suppuration and suffers acute retention for only a few days, while the second will not recover and retention will persist because the neck of the bladder is definitely and permanently altered.

The incidence of suppuration in adenomata, as noted by Leguen was as follows: adenomata weighing less than 20 gm. suppuration in one sixth; adenomata weighing between 20 and 50 gm. suppuration in one fourth; adenomata weighing between 50 and 100 gm. suppuration in three-sevenths; and adenomata weighing above 100 gm. suppuration in one fourth.

Infection of prostatic adenoma is indicated by fever and inequality of incrustations, or indurations in the prostate. Nothing suggests a cancer of the prostate more than inflammation.

Leguen outlines the surgical procedure which he prefers in different types of cases. Whenever there is infection of an adenoma, especially a small adenoma, there are extensive adhesions which render operation very difficult.

W. A. BREVIA

Gaulden, C. L. Traumatic Dislocation of Both Testicles. *California State J. Med.* 1922, 22, 390.

In search of the literature Gaulden is able to find only 2 cases of traumatic dislocation of the testicles.

The case reported in this article was that of a man 35 years of age, the father of three children. While at work as a brakeman on a log train the patient was thrown from the car and pinned between two logs which compressed his abdomen and broke both bones of his right leg in their lower third. Complaint was made only of pain in the groin and the scrotum. In the region of the inguinal canal on both sides masses could be felt which were very sensitive to the touch. The scrotum was enlarged and discolored but without external marks of injury. The testicles had been forced from the scrotum into the inguinal region.

The patient was treated expectantly. On the third day the right testicle was replaced by manipulation without anesthesia but the replacement of the left required the use of ether. The veins of the cord were lacerated and thrombosed but the epididymus and vas were not injured. The patient made an uneventful recovery. **LOUIS GROSS, M.D.**

**Shieldon, J. G. and Heller, E. P.** A Congenital Defect of the Anterior Abdominal Wall and Cryptorchidism (Report of Case). *J. Urology*. Sept. 14, 1919. 9: 424, 493.

The patient was a man 25 years of age. Examination revealed swelling in the right lower quadrant, tenderness in the left groin and absence of the testicles from the scrotum. An oblique incision was made over the swelling and in the direction of the fibers of the external oblique muscle. The fibers of the external oblique, the rectus, the conjoint tendon, and the internal oblique were found. The appendix was removed as it showed evidences of disease. The atrophic right testicle was discovered behind the cecum in the retroperitoneal structures. By dividing all the structures except the vas and its artery the testicle was placed in the upper part of the scrotum. The inguinal canal was then closed as in the Ferguson operation, and the abdominal muscles were overlapped and sutured. Except for a little drainage, healing was uneventful.

As this operation consumed considerable time the replacement of the other testicle, which was palpated in the inguinal canal, was left for later operation. **C. D. PICKENS, M.D.**

**Lichtenstern, R.** The Clinical Aspect and the Treatment of Cryptorchidism (Zur Klinik und Therapie des Kryptorchismus). *Dtsch. f. urol. Chir.* 9: 85.

The author has found absence of spermatogenesis in every case of cryptorchidism in adults. As the endocrine function of the testicles also suffers more or less, the course of time, the development or maintenance of the secondary sexual characteristics is endangered (Tandler and Gross, Kyrie, Lichtenstern). Cochrane and Glanman have shown that the condition can be remedied by early transference of the testicles to the normal position.

On the basis of his own observations, Lichtenstern recommends the correction of bilateral cryptorchid-

ism in childhood. The operation which has given the best results is bilateral fixation of the spermatic cord by means of sutures passed through only the sheath. The best time for the operation is between the eighth and tenth years. **FRANKER (1)**

**Bowling, H. H.** Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors. *J. Rad. & O.* 19, 59.

Since 1917 more than thirty patients with testicular tumors have been given radium and roentgen ray treatment at the Mayo Clinic. The majority came with diagnosis of primary cancer of the testicle and few with diagnosis of carcinoma. Most of the diagnoses were based on microscopic examination. The patients were either in good health or markedly underweight and debilitated.

The duration of the disease seems to be of more importance than the size of the tumor. When the patients were seen at the Clinic it was not difficult to determine the chief reason for their complaints and to diagnose metastatic testicular tumor. Most of them stated that they had had testicular tumor removed but that in the course of a few months they developed severe pain in the back, referred down the legs, and some weeks later discovered an abdominal mass.

Given a patient who had a primary tumor of the testicle removed and within a few months complained of symptoms in the upper abdomen and a few months later noted an abdominal tumor, therapeutic test of one intensive radium treatment may make the diagnosis in seven to ten days. If the tumor is testicular in origin it will decrease in size.

The treatment is practically the same for patients with fair or good health and those in poor health. All patients who will live a month or six weeks intensive treatment should be given. The only cases reviewed were inadequately treated. The records show that a course of from 1000 to 4000 mgm.-hrs. of radium was outlined and that one or two areas were exposed to roentgen ray therapy. The patients were instructed to obtain further treatments at home, but in only a few instances was this done. In many of the cases the metastatic tumors have disappeared under treatment. The patients seemingly are in good health and have returned to their various activities. Their chance for more lasting arrest of the disease should be greater than that of patients treated in the earlier series.

If the radium and roentgen ray treatments of the region of the growth is mapped out into areas measuring 3 by 4 cm. and 4 by 6 cm. the number of areas depending on the time of treatment. The first areas treated are small, and when the treatments are repeated the size of the area is increased in order to cut down the possibility of over irradiation of the tissues due to scattering. Fifty or 100 milligrams of radium are applied to each area at a distance of

5 cm. The radium is applied universal tube applicators with alls of 5 mm. lead and extra filtration mm of lead and mm of rubber. If the body surface to be irradiated is large (from twenty to thirty areas) the amount of irradiation for each area ranges from 700 to 1,000 mms. hrs. If there are less than eight or ten areas, 1,000 mms. hrs. are delivered to each unit. The suprascapular glandular enlargements are packed with radium. The tumor may be divided into two to four areas. The adjacent skin surfaces are protected with lead and rubber. The number of radium treatments varies. In some cases one treatment causes the metastatic tumors to disappear while in others two to four treatments at intervals of six to eight weeks are necessary.

The present technique takes advantage of the newer ideas of deep therapy. The current is sent through broad focus standard Coolidge tube. The first treatment, practically the entire lymphatic system is exposed in an attempt to decrease the enlargement and destroy any metastatic nodules. The bilateral areas exposed to radium is not treated by the roentgen ray. The adjacent abdominal and lateral alls are mapped out into areas measuring approximately 15 cm. The suprascapular spaces, axillary spaces, and inguinal glandular areas are mapped into areas sufficiently large to insure thorough irradiation. The formula used at present is: spirit gap, 3 to 24 cm.; distance of skin target, 30 cm.; milliamperage, 5; filtration 6 mm. of aluminum and layer of soft leather and time, fourteen minutes. The cross fire principle is used.

The patient should be examined at intervals of two months. If no tumor is palpable treatment should not be resumed. Most patients require from two to four treatments and then rest of from three to four months. When the physical and roentgen ray findings are negative it is safer to treat the symptoms than wait until demonstrable growth develops. Lumbar pains are usually indicative of enlargements of the deep lumbar glands.

All patients having large or small metastatic tumors but good general health are given intensive irradiation regardless of the pathologic report. Treatment by Coley mixed toxins is not advised when the case is first seen but may be considered if the case proves refractory under radium and roentgen ray therapy.

These patients undergo general reaction as well as local reaction typical of all cases treated with radium and the roentgen ray. In normal cases, vomiting and fever. If the reaction is not too severe the treatment is continued. As a rule four to six blocks are applied at one time this being repeated on consecutive days until all the areas have been exposed. If treatment is too severe however irradiation is omitted a few days until the patient condition improves. For proper interpretation of the reaction the complete radium treatment must be given and then followed by the roentgen treatment. ALBERT HURTIG, M.D.

## MISCELLANEOUS

Pflaumer. Accurate Chromocystoscopy (I. vakt Chromocystoskopia) *Zucker und Chur* 9 245

The author injects intracanalicular 1 to 5 cm. of edgocarmine in 1.5 cm. of water. The first blue color appears after 10 and once half to four minutes and the greatest concentration is reached after 6 minutes. A careful cystoscopic examination to determine the position of the ureteral openings and possible deviations from the normal must precede the injections. During the observation the beginning of the appearance of the blue color, the greatest concentration, the diminution in the color, the length of the intervals between the spurts of urine, and the extent and force of the spurts must be carefully noted with the aid of a stopwatch. The examination should be made first on the normal kidney and immediately afterwards on the diseased kidney because the phenomena following an intracanalicular injection are crowded together. It relates to the shortness of time. A darkened room and a cystoscope with bright light are prerequisites for the test and the findings should be controlled by a second observation. L. KUCK (Z)

Ellendrath, D. N. Calculous Anuria. Report of Case. *J. Am. M. Ass.* 9 2, 1912, 2057

Calculous anuria may result from (1) obstruction of both kidneys or ureters by calculi (2) obstruction of one ureter and loss of function in the other kidney due to disease congenital deformity or reflex inhibition of secretion and (3) obstruction of the remaining kidney after nephrectomy. The following case is of the third type.

The patient, a woman aged 34 years, had had periodical attacks of pain for eight weeks. The X-ray showed a small shadow within the right kidney shadow and one in the left. A pyelogram of the right side confirmed the diagnosis of stone. The urine from the right ureter contained larger number of leucocytes than that from the left, and phenol sulphophtalein, as excreted in greater quantity and sooner from the right ureter than from the left.

The stone in the right pelvis was removed through pyelotomy incision and the second stone, which was found in the parenchyma, removed through nephrotomy incision. On the sixth day severe renal colic on the left side caused symptoms of shock. Roentgenograms were not satisfactory. During the following twelve hours 800 cc. of urine were voided. The next day cystoscopic examination showed only a few drops in the bladder. The right catheter drained 100 cc. in three hours. The left ureter was completely blocked about midway to the pelvis.

Through an incision in the lumbar portion of the left ureter, large impacted calculus was delivered. The urine then increased in amount, reached 100 cc. on the fourth day. Except for local infection recovery was uneventful. L. D. PICKFILL, M.D.



Walker J T The Relation of Calcified Abdominal Glands to Urinary Surgery *Lancet* 9 cm 3

During the past few years Walker has examined forty two cases of urinary disease or supposed urinary disease in which calcification of abdominal glands was found. Calcified glands represented the final stage of tuberculosis of the mesenteric glands, a disease common in children. The literature refers almost exclusively to the active stage of the disease as it occurs in early life. Next to tuberculosis of the bronchial glands, tuberculous infection of the mesenteric glands is the most frequent cause of disseminated tuberculosis.

In the majority of the cases studied one or two groups of glands were affected. Those most frequently involved were the group lying in the lower part of the abdomen on the right side, but in some cases the glands in the upper part of the abdomen on the left side showed the condition.

Reference is made to the anatomy of the abdominal lymphatics. In 73.5 per cent of the author's cases the glands involved belonged to the ilio-colic group, and in 26.5 per cent, to the mesenteric group. With the exception of three cases, clinical examination revealed no focus of tuberculosis elsewhere, a fact which suggests that infection of the mesenteric glands may be the source of renal infection. The chief interest in calcified abdominal glands from the standpoint of urology lies in the diagnosis and treatment.

In a number of the forty-two cases other pathologic conditions were present in addition. There were seven cases of stone in the kidney or ureter, ten cases of pyelitis, and three cases of urinary tuberculosis. One woman was pregnant. In twenty-eight cases no other disease besides the calcified abdominal glands could be detected. In these twenty-eight uncomplicated cases the chief symptom was pain in twenty-five the pain was prominent feature in four, dull ache, in fourteen an abdominal colic and in seven moderately cut.

The duration of the pain varied from a few minutes to several hours. It was sudden in onset and usually ceased suddenly. In seventy-five per cent comparable to renal and biliary colics and much more severe than the pain of appendicitis. In distribution it resembled moderate renal or ureteral colic. In seventeen cases, the pain of appendicitis in four and biliary colic in one. In five cases it was not defined, and in one there was no pain. Movement had practically no effect in mitigating or increasing the pain. Vomiting did not occur. There was no retraction of the testicle and no pain referred to other parts of the body. Disturbance of bowel action was rare. Tenderness as present in four cases. As this was within the appendix area, it was confusing sign. The author attributes the pain to ureteral spasm caused by the drag or pressure of the calcareous mass.

Blood was present in the urine in six cases in which no other abnormal condition than the gland calcification could be detected. In one case there was severe intermittent hematuria for eight years as the only symptom. The details of this case are given. Removal of the calcified gland was followed by cessation of the bleeding and restoration to health. The author's experience leads him to believe that there was some relationship between the calcified glands and the hematuria.

The differential diagnosis between the shadows cast by renal and biliary calculi and calcified glands is discussed. Pyelograph and lateral radiography combined with pyelography are the best means of differentiating these conditions.

The calcified glands were removed in eleven of the forty-two cases, and in every instance the operation relieved the pain. Such surgical treatment is justified, however, only when the symptoms are severe and due directly to the calcified glands. A paramedian incision is made to the right or left of the umbilicus and care is taken to avoid injury to the superior mesenteric artery and its branches and the numerous mass adhering to the glands.

H. A. FOWLER, M.D.

# SURGERY OF THE EYE AND EAR

## EYE

Paschell, G. Preliminary Communication on Injury as Cause of Diabetes Insipidus with Bitemporal Hemianopia. *Br J Ophth* 9 2, 1, 540

During the World War four cases of wounds involving the chiasm came under the author's observation. One of these is reported particularly because of the development of diabetes. This case was that of an officer wounded over the right eyebrow March 917, by a bomb explosion and unconscious for twenty days following the injury. In the course of month the following symptoms were observed: bitemporal hemianopia, diplopia, polydipsia, polyuria (from 4.5 to 9 liters in twenty-four hours), loss of hair, loss of sexual desire, anhidrosis, staggering gait, marked asthenia, anaemia, deafness of the left ear and loss of sensation with absence of the reflex of the right cornea. Vision was 6/24 in the right eye and 6/9 in the left.

The patient remained under observation for three years. Treatment by electricity and injections of pituitary gland caused improvement in his condition: he became stronger and able to walk well but the bitemporal hemianopia, labyrinthine deafness, and polyuria remained unimproved. The coincidence of bitemporal hemianopia and diabetes insipidus as the result of injury is explained by the assumption that the shock of the injury was conveyed from the right eyebrow to the sella turcica and left petrosal bone, thus causing lesion of the chiasm, the hypophysis, and the left labyrinth.

JAMES P. FITZGERALD, M.D.

Doubt, H. P. and Carter, J. M. An X-Ray Demonstration of the Nasolachrymal Passageways—Normal and Obstructed. *J. Radiol.* 9 2, 315

In order to determine the operation of choice in any given case of obstruction of the nasolachrymal passageways, the authors have been using the roentgen ray to obtain a picture of the lumen of the passageway.

An attempt is made first to syringe solutions through the sac and duct into the nose by way of the puncta. This having been done the passageway is injected with Beck's emulsion and oil paste, about 1 cm being used in cases without obstruction, and one half that amount in those with obstruction.

The localization of the obstruction with respect to the surrounding structures is aided by placing a small silver rider over the anterior end of the middle turbinate just below its attachment to the lateral nasal wall. Another method of considerable value consists in outlining the position of the anterior end of the middle turbinate with a strip of gum thaps.

This is easily accomplished by means of a long lachrymal needle. A roentgenogram made in the lateral position will then show how much of the unobstructed passage lies above or below the root of the turbinate and whether the obstruction is in front of the turbinate or behind it.

Following the injection, roentgenograms are made of this region from several angles. The positions which have been found best are the frontal, true lateral, Waters-Waldron, and an oblique modification of the Waters-Waldron.

During the last twenty months the nasolachrymal passages have been studied in about eighty persons, including normal persons and those with obstruction. In the normal persons a number of variations from the generally accepted normal have been found. In some of them the passageway was very tortuous and showed considerable variation in its lumen. Moreover while usually the sac and duct are joined end to end there were several cases in which a side-to-side union was found.

Of the cases with definite obstruction a portion of the sac was very much dilated in some, and in others the sac was very small because of abscess formation followed by scar tissue contraction. All grades between these conditions were seen. In a number of cases with symptoms of partial obstruction there were areas of constriction which caused obstruction only when considerable quantity of lachrymal fluid was secreted.

The roentgen plate has been of value in several postoperative conditions. In cases in which short circuiting operation into the middle fossa of the nose has been performed, the exact size of the opening can be noted by this means and a fairly accurate prognosis made as to permanent relief of the symptoms. A number of patients subjected to operations for the removal of the sac later complain that they are able to express pus from the lachrymal fossa. The X-ray shows definitely whether the sac has been removed in toto or in part, and if the latter is the case, how much of the sac remains and its condition. This information is of great value to the surgeon in determining whether enough of the sac is left in place to make feasible a short circuiting operation into the nose or whether it would be better to remove the remaining portion.

ADOLPH HARTUNG, M.D.

Woods, A. G. and Knapp, A. The Diagnostic and Therapeutic Use of Uveal Pigment in Injuries of the Uveal Tract and Sympathetic Ophthalmia. *Bull. Johns H. Hosp.* 9, xxiii, 49

In previous article by Woods, clinical and experimental studies on the immune reactions following injuries to the uveal tract were presented.

These showed that when normal healing took place without the occurrence of sympathetic disturbance in the other eye, substances developed in the blood serum which gave positive complement-fixation reaction with an antigen made from the pigment of the uveal tract. On the other hand when normal healing was delayed and sympathetic disturbance occurred in the other eye, this complement-fixation reaction to pigment antigen was absent, and in one case of sympathetic disturbance there appeared to be definite hypersensitiveness to the pigment. There was also evidence leading Woods to the conclusion that the occurrence of this complement fixation reaction indicates the development of immunity to the pigment and gives definite protection against a sympathetic disturbance in the other eye.

The significance of this phenomenon with regard to the prognosis of intra ocular injury involving the uveal tract is at once evident. If the conclusions drawn are correct, the development in the blood serum of a positive complement fixation against pigment antigen would warrant a *de curative* prognosis and allow the surgeon to leave the injured eye without fear of sympathetic disturbance in the other eye. On the other hand, failure to develop positive reaction could indicate definitely that sympathetic ophthalmia is a complication to be feared and that the injured eye should be removed.

The possibility of using uveal pigment therapeutically in a sympathetic ophthalmia is also manifest. As soon as hypersensitiveness is demonstrable, the self-evident course would be to desensitize the patient and then, as a therapeutic measure, proceed either to active or passive immunization.

The numerous reactions associated with intra ocular injuries involving the uveal tract of the eye was made use of in seventeen cases as diagnostic procedure in ten cases, in which the complement fixation reaction was positive, there was normal healing without any sympathetic disturbance. Of three cases in which the reaction was negative, one showed clinically a malignant sympathetic ophthalmia and two showed definite signs of sympathetic irritation. In three other cases with negative reactions the injured eyes were enucleated as a precautionary measure. The reaction was negative also in two cases of old sympathetic ophthalmia.

The one case of malignant sympathetic ophthalmia showed positive skin reaction to the intradermal injection of pigment. Uveal pigment as used as therapeutic agent. The patient was first desensitized to the pigment and then actively immunized. The effect of this treatment was apparently beneficial.

This case of sympathetic ophthalmia, as that of boy aged 8 years. The condition developed after an operation for perforated corneal ulcer with prolapse of the iris following gonorrheal ophthalmia. The inflammation was steadily progressive and associated with all the symptoms of the severe type of sympathetic disease despite treatment by diet, intestinal irrigation, pilocarpine sweats, mercury injections, large doses of sodium salicylate and non specific protein therapy. Following desensitization and immunization with uveal pigment, the process was arrested, the eye became white and free from inflammation, and the tension fell to normal. The process continued active for three months but has now been stationary for six months. Vision is 4/60. The eye shows peripheral retraction and flat total adhesion of the iris and capsular opacities. The tension still remains normal.

JAMES P. FRY, CHICAGO, ILL.

Katsukawa R. P. Contract Extraction with Iridotomy. *Indian M. Gaz.* 1922, 17, 337.

To counteract the tendency to prolapse of the iris after a simple extraction the following technique is suggested.

After the usual incision in the cornea is made, the iris is picked up near the periphery and radial slit, 1 to 3 mm in length, is made in it with straight sharp scissors. The capsule is then cut and the lens expressed. The slit in the iris permits the contents of the posterior chamber to escape into the wound and thus obviates the possibility of prolapse of the iris. This slit does not heal, but it is scarcely visible and the pupil remains round and central.

Instead of the combined extraction, a complete iridectomy may be performed with extraction. After the corneal incision is made the iris is grasped at the pupillary margin, pulled out of the wound, and incised to red, but not completely to the periphery. This may be done with little or no pain. The vessels are not cut across as in iridectomy and the resulting coloboma is smaller and more regular.

# SURGERY OF THE NOSE, THROAT AND MOUTH

## NOSE

Eaver, I. F. S. Metal Inlays and Cobbler's Splint Dressings (Metallennlagen und Schenkelpackbende). *Mædiche med II. hæft* 9. 1m 54

In some cases it is necessary to incorporate pieces of metal in the flaps used in nasal plasticity to obtain the support required as cartilage is apt to become necrotic when subjected to tension and in some instances renders the flaps too bulky. The precious metals are the most desirable for this purpose as they are durable and not affected by the tissues and tissue fluids. Gold with a slight admixture of other metals to increase its elasticity and firmness, is used most frequently, but bronze, aluminum and various dental metals, such as the Victoria metal, are applicable.

In plasticity of the face the parts to be operated on must be completely immobilized. This is done best and most simply by means of a cobbler's splint stretched in an arch over the wound, pinned to the cheek or scalp region with mastoils, and fixed with a bandage. The portions of the face which must be brought forward are held in the desired position by leaving the threads long and suturing them to suitable point on the arch of the cobbler's splint. The cobbler's splint dressing is cheap and easily obtained; it does not exert pressure or slip out of place and it permits easy examination of the wound. The wound is sprinkled lightly with calomel and treated open. When calomel comes in contact with moisture it gives off corrosive sublimates. Nascent fumes in dry wounds do not irritate at all.

Taylor (2)

Waltz, M. B. Report of Case of Bilateral Frontal Sinus Empyema, Subdural and Subperiosteal Abscess, with Recovery. *Laryngoscope*, 9. xxiii, 966

The author reports an interesting case of bilateral frontal sinus empyema and subdural and subperiosteal abscess in male 9 years of age. Headache and nasal discharge followed an cut cold which developed about two weeks prior to the first examination.

With the exception of the examination of the head, the general physical examination was negative. The spinal fluid was clear but under great pressure.

There was noticeable swelling of the frontal region extending to the hair line above and to the upper left eyelid below. On aspiration in the frontal region pus was obtained. The nerve head in both eyes was often about 2 diopters.

The plates showed good condition of the sinuses. A smear of the pus showed atypical bacteria. The white blood count was 4000.

A Killian incision was made over the left frontal region where a large subperiosteal abscess was found. The left frontal sinus was opened and drained of pus. After the complete exposure of the left frontal sinus, pus was found coming from the right side. The incision was then continued and the right sinus completely uncovered. A necrotic opening was discovered in the left orbital roof. The orbital roof was therefore removed, the thin plates were opened and curetted and large opening was made into the nose. Pus was then found to be coming from an opening on the floor of the sinus, the left side near the midline. On removal of the inner table, large subdural abscess was discovered. The wound was packed with gauze through the nose and external opening.

With the exception of two convulsions on the eighth day which were probably due to pressure from the gauze packing the postoperative course was uneventful. J. WES C. BRASWELL, M.D.

Husik, D. N. Total Blindness of Both Eyes in a Boy 7 Years of Age Cured by an Ethmoid Operation and Opening of the Sphenoid Sinus. *Laryngoscope* 9. xxiii, 874

The boy whose case is reported became totally blind following a cold in the head with severe hemorrhages. In spite of negative clinical findings on an examination of the nose, the seriousness of the condition seemed to indicate the removal of the major portion of the middle turbinate and curettage of both ethmoids and sphenoids. This was done but evidence of disease was found. The tonsils and adenoids were removed at the same time. Three days after the operation there was a profuse purulent nasal discharge. Convalescence then ensued rapidly. Three months after the operation all test showed normal vision.

W. HENRY H. CORLE, M.D.

## THROAT

Lipschutz, B. The Clinical Importance of Ossification of the Stylohyoid Ligament. *J. Am. M. Ass.* 9. lxiii, 95

Lipschutz reports a case of unilateral complete ossification of the stylohyoid chain which consists of three parts: (1) the stylohyoid process, (2) the stylohyoid ligament and (3) the lesser cornu of the hyoid. In this case unlike others reported in the literature there was no movement whatever between the different segments of the chain.

The clinical importance of this condition becomes chiefly in the tonsils as it may interfere with the operation of tonsillectomy or give rise to vague symptoms of discomfort in the throat. Because of

these possibilities the tonsilla repon should be palpated before tonsillectomy is attempted. The roentgen ray will reveal the presence of variations in the stylohyoid chain.

As long as the process is directed down and not parallel with the carotid artery no trouble is apt to develop but if it is directed medially, as the result of development or trauma, there may be more or less irritation of the pharynx.

The treatment consists in fracturing the process and removing the distal portion with bone forceps or in rare cases, removing the entire process surgically.

O. M. Rott, M.D.

Jackson, C. J. Notes on Peroral Endoscopy and Laryngeal Surgery. *Laryngol* June 1914, 94, 330-363.

The author discusses (1) bronchoscopy in asthma and asthmatic bronchitis (2) arachnidic bronchitis (3) benign stenosis of the oesophagus and (4) the diagnosis of foreign bodies in the lungs.

Gottlieb has pointed out that in determining the etiology of bronchial asthma the susceptibility of the bronchial mucous membrane to irritation and the habits and psychology of the patient must be considered. Mental stress must therefore be relieved and the patient kept from contact with persons with respiratory infections. The use of acenes and the intrabronchial application of astringents such as silver nitrate and tannic acid are also indicated. Some reports good results from the repeated use of 10 per cent silver nitrate.

In cases of operation of a peroral larynx which were reported by Chamberlain, Murphy and Lynch the bronchi showed severe inflammation and contained a thick tenacious mucus. Complete removal of the foreign body by bronchoscopy without the use of an anesthetic resulted in cure.

Green reviews the different methods of oesophageal dilation and reports eight cases treated through the oesophagoscope. M. J. Green, M.D.

## MOUTH

Pfeiffer, G. E. and Widmann, B. P. A Case of Tubercular Oropharyngitis Treated with Apparent Success by Radium. *Am J Roentgenol* 9, 14, 156.

Although tuberculous of the oral cavity is comparatively common, search of the literature failed to reveal any cases treated with radium.

In the case reported by the authors the lesions first appeared as small punctate areas scattered

about the gum margins of the upper and lower canines and lateral incisors and the left lower molar on both the labial and lingual surfaces. These soon blended, forming irregular serpiginous lines extending well down over the surfaces of the gums and large areas of the left cheek.

The ulceration became progressively more definite and invading, but remained always fairly superficial and showed sharp, red, irregular borders within which were interspersed soft granulations with pinhead spots of yellow and gray and occasionally covered with cloudy films of dirty yellowish serum. The condition caused much irritation and frequent pain.

A 0.5 mgm plaque of radium covered with gum of rubber was fixed to a wooden tongue depressor and held firmly on as many areas as necessary to cover all of the lesions. The time of application to each area was twenty minutes. Special care was taken to guard against local reaction and destructive effects and to keep it all times within the range of stimulating dose. Seven applications were made at intervals of three weeks. The dose given was between one-third and one-half of skin erythema dose.

After each session the lesions grew paler and the pain decreased. Ultimately all ulceration, irritation, and pain disappeared. About four months later when this report was written there was no sign of recurrence.

Ascoric Harrow, M.D.

Alvord. Tuberculosis of the Salivary Glands (La tuberculosa delle ghiandole salivari). *Ann del d* 1914, 9, 4, 73.

Alvord states that our knowledge of tuberculosis of the salivary glands is due to Italian research. In 1893 De Pavio of Perugia reported the first case of tuberculosis of the parotid gland, and in 1895 Alvord reported the first case of tuberculosis of the submandibular gland. Since then very few cases of salivary gland tuberculosis have appeared in the literature.

As the condition has no special clinical symptoms, it has been diagnosed as abscess or mixed tumor of the glands.

Tuberculosis of the salivary glands in its typical form may be classed with tuberculomata. It has tendency to fibrous organization.

The few cases collected show that the treatment should be operative and radical. Apparently the granulomata can be removed successfully but in some of the cases reported were the end results known.

W. A. Brown.

# BIBLIOGRAPHY of CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of reference indicates the page of this issue on which an abstract of the article referred to may be found

### Operative Surgery and Technique

- Bloodless transplantation W WOLF Muenchen med Wchnsch 923 lxix, 7  
An aseptic method of intestinal anastomosis: an experimental study W C BRIDGER and W B McCLELLAN Surg, Gynec & Obst 922, xxv 8 6 [217]  
The use of automatic absorbable metallic sutures and ligatures J S GONZALEZ Md Surgeon, 923, lx 630  
The formation of knot with instruments K FICKER Muenchen med Wchnsch, 923 lxix, 7  
Wound tamponade W A OPPERT Verhandl d Russ Chir Pirogoff Ges Petrograd, 922  
Duration of postoperative shock by pre-operative de-sensitization J L DICKINSON Am J Surg 92 xxvii, 393

### Aseptic and Antiseptic Surgery

- Infectious vapors in disinfection: 5th lecture of iodine M W RICHMOND Zentralbl f Chir 923, xlv, 948  
Prep iodine solution R DITTMER and A HERRMANN Zentralbl f Chir 923, xlv, 950  
The pathology of inflammation: 5th emphasis upon sepsis R A KILLIP N York M J & Med Rec 923, cxvi, 358

### Anesthetics

- Respiratory complications after 7000 administrations of general anesthetics D C ATKINHEAD Canadian M J 923, xii 684  
Intratracheal infiltration anesthesia M LA MACH California State J M, 922, xv, 425  
Mixed narcosis M KILPATRICK Zentralbl f Chir 923, xlv, 390  
Paravertebral anesthesia in abdominal surgery N H LOWRY Illinois M J 923, xlv, 440  
Experiences with plastic anesthesia E PLATON Nork Mag f Laryngol, 923, lxxviii, 667  
Anesthesia of the splanchnic nerves R GARDUANO and O POTROMONICO Arch ital di chir 923, vi,

- Transsacral nerve block anesthesia in surgery of the pelvic floor and its viscera W R MEYER and E B FRANKER Surg Gynec & Obst 923, xxv 80 [217]  
The technique of spinal anesthesia ALAMURTYA J on chirurg 923, xix, 638  
The mortality and serious accidents of lumbar anesthesia M STRASS Deutsche Ztschr f Chir 923, cxvi, 396  
New applications for local alcoholization T A SICARD Arch de med chir y special, 923, x, 49  
Scopolamine anesthesia E HODGE Southwest J M & S 923, xiv, 7  
Scopolamine anaest. PAULIN, DUBREUX and TOMBAC Bull et mem Soc med d hôp de Paris, 923, lvi 567

### Surgical Instruments and Apparatus

- A hypodermic needle sterilizer and solution boiler J P FLETCHER J Am M Ass 923, lxix, 6  
Adjustable fibrous calipers with immobilized and distensible prongs for skeleton traction I E STINE J Am M Ass 923, lxix, 999  
A bronchoscopic tack and pin forceps G TUCKER Laryngoscope 923, lxxv, 948  
A new irrigator providing regulated flow and temperature of contents J C HUNT and W W V DOLAN J Am M Ass 923, lxix, 842  
Attachable irrigator stand M M VANDER J Am M Ass 923, lxix, 930  
A superficial drain H T WALK J Am M Ass 923, lxix, 93  
Russian caliper M TROSTKATZEL Wratscheboye Dyelo, 923, iii 30  
Rectal bander A J CHENOWETH J Am M Ass 923, lxix, 900  
A collapsible hammer combining an algometer and measure to determine tactile sensation, the point test, and superficial reflexes B STODOLSKY J Am M Ass 923, lxix, 999

## SURGERY OF THE HEAD AND NECK

### Head

- Craniotomy and facial transplant for congenital cranio-cerebral defect H LEIDENHART Ann Surg 923, lxxvi, 784  
Craniotomy for congenital microcephalic defect and epilepsy H NITZMAN Ann Surg 923, lxxvi, 784  
War wounds of the skull and brain M SIKORSKI Ann ital di chir 923, l, 904  
Goniotomy of the cranium CALLO Bol y trab Soc de cirug de Buenos Aires, 923, vi, 964

- Injuries of the skull J VID URRUTIA Clin y labor 923, l, 45  
Injuries of the facial portion of the skull P LARSEN Tidsskr Nor M J 923, l, 43  
Fracture with collapse of the arch in the temporo-parietal region on the left side: radiating fracture of the base intradural lacerations due to rupture of the median meningeal artery C I ALLARVE Bol y trab Soc de cirug de Buenos Aires, 923, l, 946  
Management of head injuries: 5th real or potential brain damage, with special reference to the value of saturated



Cases of cancer of the breast treated by radiation from 1915 to 1924 with comments regarding good and poor roentgenotherapy S NORDENFORS Upsk f Lager 1924, lxxvii, 300

Intensive radiotherapy in case of mammary cancer clinical and histopathologic notes G GELLY L Actino therap, 9, 3, 111

### Trachea and Lungs

Intratracheal abscess C A CAMPBELL Laryngoscope, 1922, xxxiii, 953

The diagnosis of foreign bodies in the bronchi R C LAMAR New Orleans M & S J 9, 2, lxxv, 300

Spontaneous healing of bronchial fistula J P DEAM and R L GILK Wisconsin M J 1922, xlii, 70

Spontaneous pneumothorax P J M DOWELL J Am M Ass 1922, lxxxv, 217

Chronic non tuberculous lung diseases W W W KRA Texas Stat J M 1922, xviii, 307

The surgical treatment of pulmonary tuberculosis E EMMERT Arch de med chirug y especial 9, 2, 11, 498

Indications and contra indications for artificial pneumothorax in pulmonary tuberculosis A E GIERKE Texas Stat J M 9, 2, xviii, 400

Personal experience with artificial pneumothorax G B KALL Northwest Med 9, xxi, 449

Some remarks on pleural shock in artificial pneumothorax ULLMANN Deutsche med Wochenschr 9, xlvii, 1090

The use of the thoracoscope in cases of artificial pneumothorax S V PRABHU Lancet, 9, com, 873

Pulmonary abscess J W WHITE Texas Stat J M 1922, xviii, 308

Bronchiectatic lung abscess operation recovery H M ARVONSON and W ALPERT J Am M Ass 9, lxxxv, 539

Hydatid cyst of the lung G M BALOGH Boston M & S J 1922, clxxviii, 879 [221]

The minor forms of pulmonary embolism after abdominal operations L R WARTON and J W PIERCE J Am M Ass 1922, lxxxv, 904

Fatal congestive arrhythmias in the lung and in the central nervous system due to momentary bodily exertion and their relationship to Porthes' pressure congestion E HENDRICKS Schweiz med Wochenschr 1922, ln, 833 [222]

Postoperative pneumonia H LEWIS J Am M Ass 1922, lxxxv, 54

Pulmonary tumors M STEINBERG Arch de med chirug y especial 1922, 2, 3

Gangrene of the lung and salivarian therapy H CORDENHAY Med Klin 1922, xviii, 200

### Heart and Vascular System

The estimation of cardiac volume by means of roentgenology C R BARNETT Am J Roentgenol 9, ix, 83

Cervical sympathectomy as means of stopping the pain of angina pectoris V PLATT Am J Surg 1922, xxxvi, 300 [222]

### Pharynx and Esophagus

Spasms of the esophagus K BUCK Ztschr f Ohrenh 9, lxxxix, 37

Congenital stricture of the esophagus W C A STEPHEN Arch Pediat 9, 2, xxxix, 853

Esophageal obstruction P P VIVROV Canadian Pract 9, xlvii, 54

Diverticula of the esophagus V FAURE Clin y labor 9, 3, 5

A case of pharyngo-esophageal diverticulum, operation in two stages, cure E FINOCCHIETTO Bol y trib Soc de chirug de Buenos Aires, 9, 2, vi, 925

Multiple cancer formation carcinoma of the vallecula epiglottica and of the esophagus O STRINER Med Klin 1922, xviii, 249 [222]

### Miscellaneous

A marker for identifying the right and left eye images in stereoscopic chest films P C HODGES Am J Roentgenol 9, ix, 751

Three thoracic emergencies G A STEPHENS Lancet, 9, com, 383

The thoracoscope and its practical importance, especially in the surgery of the chest H C JACOBSEN J Iowa Stat M Soc 9, 2, xii, 43

Tumors of the mediastinum L SALT Med Clin N Am 1922, vi, 89

A case of primary sarcoma of the mediastinum with hemoptysis and metastases extending into the left lung and with involvement of right suprasternal glands K GORDON Canadian M Ass J 9, 2, xii, 897

Investigations on the histologic differentiation of lymphatic mediastinal tumors E J SCHMIDT Arb d Geb d path Anat Bakteriol d pathol anat Inst Tubingen, 9, 2, 333

Mediastinal tumor with the results of X ray treatment J C LYER Med Clin N Am 1922, vi, 9

## SURGERY OF THE ABDOMEN

### Abdominal Wall and Peritoneum

Foreign bodies in the abdominal wall J R PIA Indst Writschbehoeg Dyde 1922

Exceptional hernia J W WAXLER Indian M Gaz 1922, lvi, 45

A rare case of postoperative abdominal intervascular hernia L N GOLDSCHWARTZ Russ Gynakol Westnik 1921, 9

Abdominal tumor consisting of the small intestine within peritoneal sac J L BAER Surg Gynec & Obst 1922, xxxv, 839

A case of umbilical hernia with persistent omphalomesenteric duct and intestinal fistula treated by operation O SIECK Nord Mag f Lægervidensk 9, 1, lxxviii, 778

Incarceration of an obturator hernia with perforation and the formation of an intestinal fistula on the thigh G KUEHNE Munchen med Wochenschr 1922, lxxxv, 57

A case of cystic degeneration of the mesogastrium (hepato-gastric ligament) with torsion of the larger cysts A STRAUSS Zentralbl f Chir 9, 2, xliii, 345

The anatomy and identity of "encysted" and infantile hernia A V MOSCOWITZ Surg Gynec & Obst 1922, xxxv, 7 [223]

Diaphragmatic hernia J G WURIE and G B MOWAT Land Hahemann Month 1922, lvi, 740

Experimental observations on the localization of the pain sense in the parietal and diaphragmatic peritoneum J A CARP and G H COLLEMAN Arch Int Med 1922, xxx, 778 [224]



A case of pseudomyoma peritonei. G. J. J. V. *Archiv. Nederl. Natuurk.* Gronk. 922, 12, 4.

### Gastro-Intestinal Tract

Phases of gastro-intestinal infection, pathology and treatment. G. R. BATTLE. *N. York M. J. & Med. Rec.* 19, 2, 69, 69.

Foreign body in the digestive tract. C. F. AUSTIN. *Rev. de la Assoc. med. argent.* 192, 2, 633.

On the function of the muscles of the stomach: some technical experiments. A. E. HARGREY. *Am. J. Roent.* 1920, 9, 12, 70.

Salmonella infection of Murphy button in the stomach. A. H. HARRIS. *Zentralbl. f. Chir.* 9, 2, 214, 1.

A foreign stone in the stomach found in sections of the stomach. A. LUTINA. *Zentralbl. f. Chir.* 9, 2, 214, 69.

A case of subcutaneous cellulitis with rupture of the stomach. G. JARNA. *Norsk. Mag. f. Lægervidensk.* 9, 1, 12, 5, 4.

Kontrolluntersøgelse til undersøgelse om effekten af de i den adrenergiske nervus om maven og lungen. H. KOT. *Acta Med. Scand.* 1920, 1, 1, 1, 1.

Urea position for gastroscopic examination. W. STEIN. *Zentralbl. f. Chir.* 9, 2, 214, 2.

The pylorus in the gastroscopic picture. H. STEIN. *Zentralbl. f. Chir.* 1920, 2, 214, 2.

The operation for pyloromyotomy in adults. C. RANBY. *Zentralbl. f. Chir.* 1920, 2, 214, 2.

Cooper's pyloric stenosis. J. S. C. *Arch. de med. exp. 9, 2, 12, 51.*

The method of treatment of pyloric stenosis at the University of Michigan Hospital. L. J. HALL. *J. Mich. M. Soc.* 1920, 2, 12, 5.

Peptic ulcer. K. J. WILSON. *J. Radiol.* 19, 12, 124, 1241.

Peptic ulcer with deformities of the vena, evidenced by the ray, changed for the better by treatment. W. J. MORGAN. *N. York M. J. & Med. Rec.* 1920, 2, 12, 5.

Ulcer of the stomach and duodenum. T. F. TOWSE. *Canad. J. Surg. Pathol. Bacteriol.* 1920, 2, 12, 5.

Macroscopic findings in gastric ulcer. J. ORRISON. *Brit. J. Surg.* 1920, 2, 12, 5.

Estimation of the freezing point of blood in gastric and duodenal ulcer and also in gastric carcinoma. A. H. HARRIS. *Med. J. Austral.* 1920, 2, 12, 5.

Cystic ulcer and hypercholesterolemia. J. J. ARDIS. *Arch. exp. med. 1920, 2, 12, 5.*

The diagnosis and treatment of chronic gastric ulcer. S. HARRIS. *Med. J. Austral.* 1920, 2, 12, 5.

Ulcer cancer arising in chronic gastric ulcer. W. C. MACLEARY. *J. Am. M. Ass.* 1920, 2, 12, 5.

Peptic ulcer. J. B. S. HARRIS. *Ann. M. J.* 1920, 2, 12, 5.

Some numerical reflections on peptic ulcer. G. P. DICKIN. *Med. J. Austral.* 1920, 2, 12, 5.

Peptic ulcer of the stomach and duodenum. W. HARRIS. *Med. J. Austral.* 1920, 2, 12, 5.

The cause of the recurrent gastric ulcer and of peptic ulcer of the pylorus. L. C. TOWSE. *Arch. de med. 1920, 2, 12, 5.*

A case of perforated peptic ulcer. Bol. y Trab. Soc. de Ciruj. de Buenos Aires, 1920, 2, 12, 5.

Latent perforations of the stomach and intestines. KORMAY. *Arch. de med. 1920, 2, 12, 5.*

The healing of gastric ulcer. M. J. STEIN. *Rev. M. J.* 1920, 2, 12, 5.

Gastric ulcer, duodenal ulcer and peptic ulcer of the pylorus. An special consideration of the surgical treatment. H. von HARTMANN. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

The surgery of gastric and duodenal ulcer. A. WITKOWSKI. *Arch. de med. 1920, 2, 12, 5.*

The surgical treatment of gastric and duodenal ulcer. T. AOTAMA. *Jikken Ibo.* 1920, 2, 12, 5.

Operative methods in perforated gastric and duodenal ulcer. F. P. C. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Regarding certain operations for acute gastric ulcer. C. GASTRICH. *Arch. de med. 1920, 2, 12, 5.*

The surgical treatment of ulcer of the stomach and duodenum. W. K. 1920. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

The disadvantages of gastro-enterostomy as an operation for ulcer. O. MANN. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Phases of the stomach. J. LUTINA. *Med. J.* 1920, 2, 12, 5.

Cancers of the stomach. A. W. HARRIS. *N. York M. J. & Med. Rec.* 1920, 2, 12, 5.

Prophylactic gastrotomy in extensive cancers of the cardia and the anterior half of the stomach. M. T. LYON. *Canad. J. Surg.* 1920, 2, 12, 5.

Resection of gastric cancer. I. GONO. *Jikken Ibo.* 1920, 2, 12, 5.

Repeated ineffectiveness in gastric cancer. X. DUBOIS. *Can. J. Surg.* 1920, 2, 12, 5.

The non-recurrence of gastric cancer after operation. S. HARRIS. *N. York M. J. & Med. Rec.* 1920, 2, 12, 5.

The gastroscopic diagnosis of diffuse lymphosarcoma of the stomach. M. HARRIS. *Arch. de med. 1920, 2, 12, 5.*

The surgery of gastric and duodenal tumors. J. SCHWITZER. *Arch. de med. 1920, 2, 12, 5.*

A flap incision giving free retroperitoneal access to the stomach. LUTINA. *Canad. J. Surg.* 1920, 2, 12, 5.

The influence of the method of returning upon the healing of operative wounds in the gastric wall, and contribution to postoperative peptic ulcer of the pylorus. M. GALL. *Arch. f. Klin. Chir.* 1920, 2, 12, 5.

Urea therapy for resection of the stomach. K. ORRISON. *Zentralbl. f. Chir.* 1920, 2, 12, 5.

The technique of gastric resection. G. SOLANO. *Arch. de med. 1920, 2, 12, 5.*

Terminological gastroenterology in the Balthaz method of resection. H. von HARRIS. *Zentralbl. f. Chir.* 1920, 2, 12, 5.

The importance of vascularization of the ends of the intestine after gastrectomy and colectomy. L. DUBOIS. *Can. J. Surg.* 1920, 2, 12, 5.

A review of the study of the normal intestine. C. COLEMAN. *Arch. de med. 1920, 2, 12, 5.*

Three cases of perforation of the intestine by fishbones. G. I. STEIN. *Norsk. Mag. f. Lægervidensk.* 1920, 2, 12, 5.

Intestinal infections and toxemia and their biological treatment. N. P. NORMAN. *N. York M. J. & Med. Rec.* 1920, 2, 12, 5.

A contribution to the pathogenesis of pain in intestinal colic and the possibility of the intestinal wall. F. BARTH. *Arch. de med. 1920, 2, 12, 5.*

Intestinal cancer. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Intestinal cancer. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Intestinal cancer. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Intestinal cancer. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

Intestinal cancer. *Deutsche Ztschr. f. Chir.* 1920, 2, 12, 5.

- Intestinal invagination in infants. M. R. MORRIS. *Rev. Assoc. med. argent.* 922, xxiv, 603.
- Intestinal invagination in children. J. C. A. DER VEE. *Nederl. T. geschr. v. Geneesk.* 922, lxxvi, 733.
- A curious case of intestinal obstruction. J. B. TALLA. *Rev. españ. de ciruj.* 922, iv, 34.
- Intussusception. L. R. ELLIOTT. *Am. J. Surg.* 9, xxvi, 307.
- A short consideration of some phases of intestinal obstruction. W. D. HARTZ. *Ohio Stat. M. J.* 9, 2, xviii, 89.
- Laparotomy for intestinal obstruction on board ship. V. MAYER. *Brit. M. J.* 9, 2, 11, 977.
- Bowel obstruction following operations occurring during the convalescent period. A. WARRIS and L. BROOKS. *California State J. M.* 9, xii, 438.
- Cystic sarcoma of the small intestine. MARMAN. *Bull. et mém. Soc. de chir. de Par.* 92, xlviii, 725.
- Some observations on the surgery of duodenal membranes, with call to report of the results of treatment. R. P. CHANDLER. *Canadian M. Ass. J.* 9, xii, 876. [225]
- The retention mechanism in the duodenum. K. WARRIS and S. KROGGER. *Deutsche med. Wochenschr.* 9, 2, xlviii, 97.
- Direct sounding of the duodenum with the aid of metal sounding and the production of the roentgen ray. S. BOYER and F. ELLIOTT. *München med. Wochenschr.* 92, lxxv, 572.
- Congenital duodenal obstruction: malrotation of the intestine: report of case. B. S. DRYER. *Am. J. Dis. Child.* 92, xxiv, 534.
- Duodenal obstruction due to the mesenteric pedicle. P. MCGEE. *Bull. et mém. Soc. de chir. de Par.* 9, xlviii, 37.
- Two cases of duodenal obstruction in infants. R. C. JENNINGS. *Proc. Roy. Soc. Med. Lond.* 92, xvi, 10. *Brit. Study Dis. Child.* 10. [226]
- Experimental duodenal stenosis and gastric stony. W. KORTVECK. *Zentralbl. f. Chir.* 9, 2, xlii, 67.
- The therapeutic value of the duodenal tube. C. D. AUBREY. *N. York M. J. & Med. Rec.* 9, 2, cxvi, 645.
- Investigations and observations on ulcer of the duodenum. H. HOLTMEIER. *Med. Klin.* 9, xviii, 95.
- Two unusual cases of simple round ulcer of the duodenum. ad. oesophagus. L. SCHAEFFER. *München med. Wochenschr.* 92, lxxv, 93.
- The pain of duodenal ulcer. A. CADÉ. *Arch. de med. chir. g. spécial.* 922, x, 5.
- Report of six cases of acute perforation of chronic duodenal ulcer. W. A. KIRKLAND. *Colorado Med.* 922, xiv, 51.
- Duodenal perforations as primary gastro-enterostomy. W. DOUGLAS. *Med. Press.* 9, cxv, 49.
- The treatment of carcinoma of the papilla of Vater. P. KLEINSCHEIDT. *Deutsche med. Wochenschr.* 9, xlviii, 97. [227]
- The genesis of peptic ulcer of the jejunum. R. BEA. *Curr. Arch. Mal. de chir.* 9, vi, 897.
- Peptic ulcer of the jejunum. H. HARKNER. *Arch. f. Verdauungskr.* 922, xxviii.
- The treatment of jejunal laceration following gastro-enterostomy. L. URSUTTA. *Clin. y labor.* 9, 5, 47.
- Jejunocolic fistula following gastro-enterostomy. R. PROCHEROT. *Bol. y trab. Soc. de ciruj. de Buenos Aires.* 922, vi, 938.
- Remission on primary sarcoma of the small intestine: sarcomatoma of the jejunum and healed ulcer of the duodenum. GLAW and ALBRECHT. *Deutsche med. Wochenschr.* 922, xi, 10, 98.
- Cholecystitis notes on case of simple perforating ulcer of the duodenum. ATERBARAY. *Rev. españ. de ciruj.* 922, iv, 335.
- Enterocolic invagination due to primary lymphosarcoma of the duodenum. J. ARRAUJO. *Bol. y trab. Soc. de ciruj. de Buenos Aires.* 9, 2, vi, 880.
- The rôle of the traumatic factor in the pathogenesis of pericolic bands and membranes. P. A. D'ACQUINO. *N. York M. J. & Med. Rec.* 922, cxvi, 699.
- Enterocolitis. C. VAN NOORDEN. *Arch. españ. de ciruj. y par. digest.* 92, v, 645.
- Catheterization and surgical treatment of chronic duodenitis-colicitis. S. G. GALT. *Ohio Stat. M. J.* 922, xviii, 83.
- Appendicectomy for chronic ulcerative colitis. W. MEYER. *Am. Surg.* 922, lxxvi, 79.
- Appendicectomy in chronic colitis. O. CHOUVET. *Arch. Mal. de chir.* 9, vi, 805.
- The treatment of non-malignant affections of the colon. W. A. LANE, G. WARD, H. M. W. GRAY II, J. PATTERSON and WILTON A. J. *Brit. M. J.* 9, 2, 14. [227]
- Dilation of the cecum. G. E. ARNOTT. *Arch. de Hosp. Mém. de la Habana.* 922, 1, 573.
- Relationship between ileocecal colic and arthritis deformans. R. SMITH. *Surg. Gynec. & Obst.* 922, xxiv, 8.
- Further observations with the X ray upon the appendix. A. HANCOCK and L. J. MERVILLE. *N. Orleans M. & S. J.* 92, lxxv, 29.
- An unusual type of appendix. PERRIN. *Lyon chirurg.* 1922, xii, 570.
- Acute appendicitis. P. GRAFFAGNINO. *N. Orleans M. & S. J.* 9, lxxv, 577.
- The symptoms and diagnosis of acute appendicitis. A. RIVAS. *Clin. y labor.* 922, 1, 40.
- Appendicitis in infants. G. LESTACHE. *Sépméd.* 922, lxx, 33.
- Appendicitis and chronic cholecystitis: operation recovery. A. PARRAZ. *Arch. Brasil. de med.* 19, xii, 845.
- The relation between ovarian varicose veins, pyelitis, and local vasculopathy of the appendix wall. E. H. DART. *Wood. Brit. M. J.* 922, 11, 70.
- Herniation of appendix. A. P. C. ASHLEY and L. G. WOODCOCK. *J. Am. M. Ass.* 19, lxxix, 35.
- An atypical operation—especially subtotal extirpation (excision of the tip of the appendix)—in cases of severe adhesions due to appendicitis. J. RICHTER. *Deutsche Ztschr. f. Chir.* 9, 2, cxiii, 48. [228]
- The clinical aspects and pathology of primary malignant diseases of the cecum: appendix. H. M. PERRY. *J. Roy. Army Med. Corps Lond.* 922, xxxiii, 419.
- A technical simplification of appendicectomy operations devised by Retti B. M. TAMBA. *Riforma med.* 922, xxxii, 80.
- The pre-operative and postoperative treatment for colon malignancy. R. F. CARTER. *N. York M. J. & Med. Rec.* 9, 2, cxvi, 630. [229]
- Intestinal resection for gangrene in hernial sac after cholecystectomy. BIRLAND. *Lyon chirurg.* 922, xii, 613.
- T. cases of colectomy as an emergency operation. E. V. MUNO. *Revista med.* 922, xlii, 78.
- Total resection of the colon. F. COLEMAN. *Deutsche Ztschr. f. Chir.* 9, cxiii, 365.
- An aseptic technique for the resection of the intestine. C. F. HORTON. *Am. Surg.* 9, lxxvi, 745. [231]
- Aseptic resection of the intestine. F. K. COLLINS. *Am. Surg.* 9, 2, lxxvi, 739. [231]
- Perforating sigmoiditis. SA. ARRAUJO. *Bull. et mém. Soc. méd. d. hôp. de Par.* 1922, xlvii, 19.
- The removal of sharp-pointed foreign bodies from the rectum. A. A. LARSEN. *N. York M. J. & Med. Rec.* 922, cxvi, 703.

Perforating diverticulum of the sigmoid flexure J  
Dunn Münchenber med Wochenschr 1922, lxxv, 785  
Prolaps of the rectum T J W TIERE Surg Ovarc  
& Otol 1922, lxxv, 830

Remarks on carcinoma of the rectum E A VAN DER  
WYK and A M THORNTON Am J Surg 1922, lxxvi, 807  
Cancer of the rectum in the presence of 4-7 Wasson  
index M GORD N York M J & Med Rec 1922,  
cxvi, 706

Involvement of the lymph nodes in carcinoma of the  
rectum J R McLA Ann Surg 1922, lxxvi, 755 [221]

Resection of the rectum for carcinoma—combined opera-  
tion W M YEE Ann Surg 1922, lxxvi, 795

Constitutional transformation of the lacteal-stream and  
superficial veins W S QUINLAN Boston M & S J  
1922, cxviii, 870 [241]

The hemorrhoidal problem S HYMA California Med  
J 1922, cx, 45

The treatment of hemorrhoids by injection K T DE  
MAYNE Amer J Surg 1922, cx, 10

The treatment of proctitis of the anus J BAUER  
Therap d Gegen 1922, lxxv, 370

# Liver, Gall Bladder, Pancreas, and Spleen

The relationship of the functions of the liver and spleen  
G ENZINGER and J BRONER Bull et infir Soc med d  
hop de Par 1922, cxvi, 190

A new method of testing liver functions with phenolphthalein  
chlorophthalate, clinical report S M ROSENTHAL J Am  
M Assoc 1922, lxxvii, 31

The cystic liver in the mesenteric space and  
the aid of peritoneoscopy, and observations on the  
function of the abdominal cavity with various cases  
W THORNTON Fortschritte d Geb d Gynäkologie  
1922, 9, 307, 367

Congenital obstruction of the bile ducts and congenital  
biliary cirrhosis of the liver J K GORDON Boston  
M & S J 1922, cxviii, 825 [222]

The effect of biliary obstruction on the liver of  
biliary parasites J C HAMMERTON N York M J &  
Med Rec 1922, cxvi, 643

Can the biliary drainage of the hepatic duct be replaced  
by more complete procedure? The ideal cholecystic  
cyst R GORD Münchenber med Wochenschr 1922,  
lxxv, 1144 [223]

Cholecystocholangostomy as a substitute for biliary  
hepatic drainage H FLORENZ Münchenber med  
Wochenschr 1922, lxxv, 41

Degenerative changes of the liver T B CARTER  
Brit M J 1922, x, 75

Degenerative changes of the liver H ROBINSON  
Brit M J 1922, x, 955

Primary carcinoma of the liver the tropics F P  
S. JONES and M STRAUSS Niederländisch Typhoid  
Gesellschaft 1922, lxxv, 3

The relationship of primary to the ducts of the biliary  
system LUCIFER in Zuchr f aenst Verhöl  
1922, 9, 207, 5 [224]

A case of toxemia of the gall bladder P ORLAND  
Gyn 1922, 9, lxx, 45 [225]

A case of biliary cirrhosis A G VANCE Brit  
M J 1922, x, 7

The escape of bilirubin into the biliary tract I FEA XT  
Med Abh 1922, cxvii, 27 [226]

The prognosis and treatment of obstruction of the bile  
ducts by hydatids SIVARATO Bull et infir Soc med  
d hop de Par 1922, cxvi, 8

Atrophic closure of the cystic duct A H HENNA  
Zentralbl f Chir 1922, cxv, 377

Cholecystitis T B CARTER J South Carolina M  
Ass 1922, lxxvii, 35

Cholecystitis its relation to infection of the liver and  
pancreas W H BARBER N York State J M 1922,  
lxxv, 543

Chronic catarrhal cholecystitis with broad deposit  
J R CONNERY Ann Surg 1922, lxxvi, 796 [227]

The pathogenesis of biliary infection C B SOLER  
Surg med 1922, lxx, 32

The change in the cholesterol content of the blood in  
cholelithiasis M BARBERY Oron Med 1922, lxxv,  
197

A contribution to the study of connective tissue changes  
in the gall bladder V D C LEWIS and F A RUTHER  
N York M J & Med Rec 1922, cxvi, 640 [228]

Surgery of acute conditions of the gall bladder E B  
JOHN and W P HANMER Minnesota Med 1922,  
cxv, 687

Source of the abdominal cavity, short drainage in  
operations on the gall bladder H von HARTMAN Deut  
sche Zuchr f Chir 1922, cxviii, 78

Studies in pancreatic function C W McCLURE and  
C M JONES Boston M & S J 1922, cxviii, 809 [229]

Acute pancreatitis J F CONNORS Ann Surg 1922,  
lxxvi, 780

Acute inflammation of the pancreas A SCHULZ Klin  
Med 1922, 9, 73

A pancreatic cyst in the left hypochondrium extirpated  
H A B BOWMAN Minnesota Med 1922, cxv, 697 [230]

Primary nodular cancer of the pancreas H I CONNORS  
N York M J & Med Rec 1922, cxvi, 704

Hydrops of the entire biliary tract system due to in-  
crease of the pancreas H ORLAND Deutsche med  
Wochenschr 1922, lxxv, 166

Traumatic rupture of the spleen J P CONNORS Am  
Surg 1922, lxxvi, 785

Traumatic rupture of the spleen J T BOATON Am J  
Surg 1922, lxxvi, 3

A case of traumatic rupture of the spleen L RAC  
CAVAL Arch ital di chir 1922, vi, 66

A spleen ruptured at two different times L. ROMANA  
Zentralbl f Chir 1922, cxv, 71

Enlarged hemangioma of the spleen P LOYRARD and  
H DUBOCHET J de chir 1922, cxv, 694 [231]

Splenic embolism O CORVOCCI Arch ital di chir  
1922, vi, 38

Discussion on the surgical treatment of non traumatic  
affection of the spleen J CAMERON E H KITTLE and  
K. PALMER Brit M J 1922, x, 304

## Miscellaneous

The relationship of the surgical abdomen to the chronic  
patient E ANDREWS WASHINGTON M J 1922, cxv, 373

The relationship of abdominal symptoms to the chronic  
patient J A LUCIFER WASHINGTON M J 1922, cxv, 364

The clinical significance of incision abdominal pain  
A M ROWLEY Boston M & S J 1922, cxviii, 844

Refractive keratitis R FALCONER Arch ital di  
chir 1922, vi, 192 [232]

## SURGERY OF THE EXTREMITIES

## Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Inkreditory deformities G F KIVLER Brit M J 92, 1, 3
- Bone diseases—osteoporosis or hypoplasia from fixity and non use J C HILLOCKOUR J Rachol 9, 2, 25
- The pathogenesis of rickets E PATTENSON Proc Roy Soc Med Lond 9, xvi, Sect Study Dis Child
- The pathogenesis of rachitic disturbances of growth and dental deformity H BLASSE Arch f Klin Chir 9, cxi, 704
- Posttraumatic osteomyelitis of the pubic bone J C M BUTLER Med Clin N Am 9, 503
- Vaccination treatment in osteomyelitis A B SCHWENZ med Wochchr 9, 2, 4, 869
- The bases and indications for primary closed drainage about drainage in osteomyelitis F K WEAVER Ver handl d Ross Chir Pirogoff Ges Petrograd, 9
- The roentgen picture and indications for treatment in bone and joint tuberculosis F DE QUILLATZ Schwenz med Wochchr 9, 4
- The treatment of suppurative tuberculosis with ultraviolet actinic irradiation cold blooded animals A HARRISON Razhlyd Chir 9, 2, 4
- The mathematical and biological middle position of joint S RIMMER Ztschr f orthop Chir 9, 4, 350
- Chronic diseases of the joints other than mycosis and neoplastic conditions G LEBERSON Irpsen d Chir Orthop 9, xv, 304 [235]
- Neuropathic arthritis J H DEWE J Am M Ass 9, 1917, 957
- Facts and theories explaining the spontaneous origin of joint disease M HARRIS Medisch med Wochchr 9, 1917, 54 [236]
- Contractures and simulation B VON VITTEL Med Klin M J 9, 2, 53
- Adipose muscle atrophy (gibberus musculus muscle) in the course of appendicitis H F O HANFELD M H Wochchr 9, 4, 96
- The theory of the hormone like action of the synovium on the regeneration of tendons I W Zentrallbl f Chir 9, 217, 467
- Articular crepitation P JACOB Ligak f Lander 9, 2, 1900, 97 [237]
- Traumatic osteoma of the elbow induced by radiation with good result C BORRAT Bull et mtes Soc med d hôp de Paris 9, 217, 61
- A case of club hand A MORTON Lancet 9, cont.
- Pseudotumor in the foot of children and their diagnosis important M CORWALL M ARLE Pedic 9, 2, 35
- Observations on the course of the adolescents and the familial occurrence of osteochondritis deformans coxae juvenilis W M LILLI Arch f orthop Unfall Chir 79, 2, 337 [238]
- Child Legg Perthes disease of the hip osteochondritis deformans juvenilis coxae L STEINLEF Jussak f Chir medik handl 9, 1917, 244 [239]
- Lat machine of the great trochanter A RAYL Wien klin Wochchr 9, 217, 534 [240]
- Remarks on the etiology of tubercular disease W RYDER Arch f Klin Chir 9, cxi, 9 [241]
- Pathology feet A SCHMIDT Med Klin 9, 2, 1917, 4

- Tuberculosis of the ankle joint of tarsus H J LITZ SIMSON Boston M & S J 9, 2, 1917, 898
- Flat foot or pes planus C H ROSE Trans Mahanman Month 9, 2, 733
- Sciotic neuritis and its relation to flat foot W MARTI Am Med 9, 217, 69
- The frequency of congenital clubfoot and congenital dislocation of the hip QUINN Zentrallbl f Chir 9, 217, 414
- Remarks on the reports of Deutscheröder and Vogel on an unusual disease of the metatarsus Inflammation fracture? R ELLER Zentrallbl f Chir 19, 217, 4 [242]
- The development of arthritic deformities in the metatarsophalangeal joints K WACHENDORF Deutsche med Wochchr 9, 217, 590
- A rare case of polydactylism of the foot G H EDWARDS and W B PRINCE Glasgow M J 9, 509
- An old time reminiscence of trench foot D M GRIE Edinburgh M J 9, 217, 207

## Fractures and Dislocations

- Etiology in fractures F A HENNINGSEN J I Stat M Soc 9, 2, 408
- II Hered inheritance of fracture H C WOODBOLT and C J VAS Brit M J 9, 2, 7
- Experiments on the fracture material of Block in fractures and operations on bones P G K BENTON Hosp Tst 9, 2, 177
- A 10 year survey of the routine treatment of fractures by operative methods A LORNO Brit M J 9, 2, 100
- The treatment of typical fractures in infancy A FRICKE Gynäk 9, 2, 5
- The temporary plating of fractures of the long bones C H ELLIOTT Brit M J 9, 2, 4
- The treatment of ununited fractures of bones C LARSEN Wien med Wochchr 9, 1917, 66 [243]
- The treatment of ununited fractures by bridge grafts D DRYE Brit M J 9, 2, 5
- Mistakes in the treatment of fractures H L BYRRE J Roy Stat M Soc 9, 2, 300
- Fracture of the clavicle W PRINCE Deutsche Ztschr f Chir 9, 217, 7
- Fracture-dislocations of the humeral head W VA HENK Boston M & S J 9, 2, 1917, 960
- The operative treatment of supracondylar fractures of the humerus W PRINCE Deutsche Ztschr f Chir 9, 217, 7 [244]
- Advances in the treatment of the so-called typical fracture of the radius W J ROBERT Med Klin 9, 217, 673 [245]
- Compression fractures of the lower end of the radius J H BRYE Ann Surg 9, 1917, 590 [246]
- Rare mal injuries D DE LA VON Arch franso-belges de Chir 9, 217, 86 [247]
- Dislocation of the semilunar carpal bone H B K APP J Am M Ass 9, 2, 1917, 99
- The immobilization of the long bones of the extremities in the field in cases of fracture A GREGORY Zentrallbl f Chir 9, 217, 25
- Conspicuous subluxation of the hip Osteochondritis (or coxitis) in subluxation I CALOT and H COLLET Arch u hand-chir f Med 9, 217, 393 [248]

- Zygomatic epiphyseal fractures (the hip) R WHITMAN Ann Surg 1922, lxxvi, 634 [229]
- Immediate operation for fracture of the neck of the femur A O WILLIAMS Ann Surg 1922, lxxvi, 65 [229]
- The use of an osteoplastic graft in the treatment of fractures of the neck of the femur C DEJARIER Bull et mémoires Soc de chir de Par 1922, xlvi, 266
- The treatment of patellar fractures E FORCUM Arch de med chir et spécial 9 2, 12, 530
- A simple apparatus for the treatment of subluxation of the knee in tuberculous inflammation B ZACHARIN Zentralbl f Chir 1922, xlii, 550
- Changes in the crucial ligaments and value of the tibial space C F PARVIZ Boston M J S J 93 [230]
- Behandlung der dislocation of the foot B H MOORE Surg, Gynaec & Obst 1922, xxxv, 752 [230]
- A case of break-up of the tibia calcaneus A MURPHY 12, 13, Wm. W. W. W. W. 19 2, xxv, 695 [230]
- The treatment of fracture of the body of the calcaneus with nail attention W KATZ Zentralbl f Chir 1922, xlii, 14 5
- A simple method of treating clubfoot (congenital talipes equinovarus) A S B B EAST Brit M J 1922, x, 115

### Surgery of the Breast, Joints, Muscles, Tendons, Etc.

- Surgery in infantile psoriasis M S HEDGECOCK Minnesota Med 1922, v, 704 [231]
- The ankylosis treatment of surgical tuberculosis M DRY & OROVACI 19 1922, 192 [231]
- The surgical treatment of tuberculosis from the standpoint of biology W DEGEN Deutsche med Wochenschr 1922, xlviii, 28
- Principles governing the management of osteomyelitis M. HANLEY J Med Am Groups, 9 21 487
- The treatment of chronic osteomyelitis following gunshot wound of the thigh A D CHERRY Verhandl d Russ Chir Pirogov Ges, Petrograd, 9
- The use of large Reverdin grafts in the healing of chronic osteomyelitis M R RICH Bull Johns Hopkins Hosp, Balt 1922, xxxvii, 286 [232]
- The above of osteomyelitis A MONTAGNI Press med Par 9 supp 2034

- The cartilaginous and bony neoplasms caused by fixed grafts of cartilage and bone B POLSTINE Arch ital de chir 1922, vi, 75
- The conservative treatment of pseudotumors II MYER Deutsche Ztschr f Chir 1922, cxvii, 378
- The permanent effect of slight force in the treatment of osteoarthritis (Guegel method) P MOSCOWITZ Ztschr f Orthop Chir 1922, xlii, 5
- The treatment of panaritium W HICKLEY Munchen med Wochenschr 1922, lxxv, 255
- Tallectomy of the abductor of the finger tendons of the forearm and hand—radical extirpation W MYER Ann Surg 1922, lxxvi, 79
- Arthroplasty of the elbow W C CAMPBELL Ann Surg 1922, lxxvi, 65 [240]
- The end result of an Albee graft in case of psuedarthrosis with loss of substance in the lower third of the radius PIRROV Bull et mémoires Soc de chir de Par 1922, xlvi, 215
- How has the Sauerbruch procedure stood the test in cases of amputation of the arm? P JOYCEWITZ Munchen med Wochenschr 1922, lxxv, 202
- Extra-articular ankylosis of the hip (pyrexia of the hip) J HALL Zentralbl f Chir 1922, xlii, 406
- A case of disarticulation of the hip A GUERRA Rev de med y chir de la Habana 9 xxvii, 75
- Wounds of the knee II MOSCOWITZ Pirogov Ges Par 1922, xxx, 661 [241]
- Arthroscopy for chronic arthritis of the knee II NYQUIST Ann Surg 9 2, lxxvi, 76
- A new approach to the meniscus cartilage P W ROBERTS J Am M A 1922, lxxvi, 1902 [241]
- The fascial bundle, an operative procedure for the prevention of pathological internal rotation of the leg I ROBERTS Ztschr f Orthop Chir 19 1922, 372
- The surgical treatment of muscle hernia of the tibial antrum E HENRI Verhandl d Russ Chir Petrograd Ges Petrograd, 9
- The diagnosis and treatment of flat foot E S HAYES N Orleans M J S J 19 2, lxxv, 394
- The Klapp method of arthrodesis for foot joints O STARK Zentralbl f Chir 19 1922, 24
- Amputations and prostheses W ROMANOFF Moskov M J 1922, x, 17
- The Guegel operation in aneurysm medicine LIX, 12 Arch f Orthop u Unfall Chir 19 22, 49 [242]

### SURGERY OF THE SPINAL COLUMN AND CORD

- Puncture of prevertebral abscess I SCHNEIDER Munchen med Wochenschr 1922, lxxv, 779 [244]
- Cervical ribs KROH and MYER Deutsche med Wochenschr 1922, xlviii, 973 [244]
- Suppurative osteomyelitis of the vertebral column O STARK Arch f Klin Chir 1922, cxx, 630
- Traumatic spondylitis I II OCHSNER Proc Roy Soc Med Lond 1922, xvi, Sect Orthop [244]
- Rheumatic spondylitis—spondylitis deformans G E SCHNEIDER Upsala Lagen, 9 2, lxxv, 93 [245]
- The differential diagnosis between the beginning of bacillary spondylitis and chronic rheumatism of the vertebrae of the back C MAU Munchen med Wochenschr 1922, lxxv, 45
- The pathogenesis and treatment of tuberculous spondylitis F LOEWEN Erglen d Chir Orthop 1922, xv, 30
- A case of Pott's disease associated with injury F B HODGE Lancet 1922, cxxv, 383

- Bony bridging in tuberculosis of the spine R B COFIELD J Am M A 1922, lxxvi, 37 [245]
- Operative immobilization of the spine in tuberculous spondylitis W N SCHWARTZ Verhandl d Russ Chir Petrograd Ges, Petrograd, 9
- The operative treatment of scoliosis S KATZMANN Arch Surg 1922, 63 [245]
- The accuracy for an immediate and thorough roentgenological study of all injuries to the spine II W CAMPBELL California State J M 19 22, 436
- The pathologic anatomy and clinical aspect of spine bilda cystitis based on autopsy findings in the newborn J von FRICK Dissertation, 1922
- The anatomy, pathology, and treatment of spine bilda cystitis and its sequelae M HANSEN Munchen med Wochenschr 1922, lxxv, 219
- A tuberculous tuberculosis of the cervical vertebra C URSCHIA and N ELLER Bull et mémoires Soc med d hôp de Par 1922, xlv, 1497

## SURGERY OF THE NERVOUS SYSTEM

- The trend of neurological surgery C H FRAZEE  
J Indiana M Ass 922, xv, 405
- A histologic study of Varicella nervi hetero-transplantation A POUSSARD and R LEBERRE Lyon chirurg 922, xii, 544
- The use of cauterization neuromatoma of the small branch nerves in the pathology of the limbs and viscera R LEBERRE Lyon chirurg 922, xii, 550
- Unilateral division of the phrenic nerve in angulitis J OELLER Muenchen med Wchnschr 922, lxxv, 344
- Injuries of the nerves of the arm H ANGRABER Ugrsk f Leger 922, lxxv, 205

- Exposure followed by meningoencephalitis C C WALKER J Am M Ass 922, lxxv, 2000
- Late nature of the brachial plexus II NEUBERGER Ann Surg 922, lxxv, 782
- The technique of nerve suture O LANGENBAUM Zentrbl f Chir 922, xlii, 53 [246]
- The physiological effect of extirpation of the peri-articular sympathetic nerve plexus I B URBANO and O S ARIZONA Wchnschr 922, x, 407 [247]
- Paralysis and stimulation of the nerves in the pathogenesis of loss or decrease of nerve function by disease or extirpation of the nerves, especially in spina bialia occulta F BRAUNING Klin Wchnschr 922, lxxv, 694

## MISCELLANEOUS

## Clinical Entities—General Physiological Conditions

- Recent progress in physiology P G STILES Boston M & S J 922, x, 436, 836
- The role of oral focal infections in general medicine C E ELLIS Dental Cosmos, 922, lxxv, 308
- Surgical aspects of endocrinology W D G RICE J Indiana State M Ass 922, xv, 425
- The surgical emergency J H GORDON Internat J S 922, xxiv, 42
- Adenoma E GONZALEZ Report de med y chirug 922, xii, 667
- Hydatid cysts J SALADON Semana med 922, xii, 947
- Posterior sacrocoelomic dermoids of cysts M E STOUT Southwest J M & S 922, x, 6
- Changes in the blood in cases of malaria treated by the X-rays G SPANNOLO Actinoterapia, 922, x, 369
- The treatment of carbuncle J SERRA Arch de med chirug y especial 922, x, 45
- The treatment of carbuncle E M TLOS Arch de med chirug y especial 922, x, 67
- A case of abscess caused by the introduction of mercury under the skin SERRA J Dentische Ztschr f Chir 922, lxxv, 25
- Gumma of the forehead with fungiform report of case H GONZALEZ J Am M Ass 922, lxxv, 2000
- Gonorrheal lymphoma 1 cases O CLARA Brasil med 922, lxxv, 400
- A palmar muscular cavernoma of unusual situation L CAYANO Policia 922, x, 654
- A lipoma weighing 14 kgs taken from the inner aspect of the right arm A D KIR Boston M & S J 922, x, 656
- Lipoma of the perineum F W RA KIR and A J SCHOLL J Am M Ass 922, lxxv, 204
- New attempts to procure immunity to malignant disease in man S KIR Canadian M Ass J 922, x, 84
- The physical chemistry of carcinoma N WATKINS Ztschr f Krebsforsch 922, x, 212
- The present status of research regarding the experimental production of cancer the results of this research, and the problems arising from them J FRIEDER Acta chie Scand 922, lv, 243
- The production of cancer by specific forms of irritation J A MIERA Brit M J 922, x, 3
- Protonema defers as the primary cause of malignancy H B F VILHOS M J 922, x, 445

- Epitheliomatous alterations in industry T M LROSE Brit M J 922, x, 12
- Paraffin cancer and its experimental production A LITTLE Brit M J 922, x, 104
- Experimental production of cancer by arsenic A LITTLE Brit M J 922, x, 107
- Tar cancer in mice G ROBERT R LITTLE and E. PETER Proc Roy Soc Lond 922, x, 106
- On the occupation cancer of the paraffin and oil workers of the Scottish shale oil industry A SCOTT Brit M J 922, x, 108
- Experimental root cancer R D PAXLEY Brit M J 922, x, 108
- The cancer problem in South Dakota F KIRBY J Lancet 922, x, 603
- Maligant tumors in arm countries C GONZALEZ Dentische med Wchnschr 922, x, 34
- The relation of the general practitioner to the cancer problem A L SERRA Med Press 922, lxxv, 495
- Cylindroma B ALLEN Arch Mal ch chir 922, x, 53
- The treatment of malignant pustule (carbuncle) by intra canos injections of neosalvarsan E A S DE AJ and J D LA PUERTA Segto med 922, x, 3
- Irradiation and cancer I CAR Prog de la clin Madrid, 922, x, 45
- The surgical aspect of cancer C BIRCH J Radiol 922, x, 57
- Basaloma W DAMENHA Boston M & S J 922, x, 650
- The treatment of gangrene of the leg of arterial origin G JEA NIXT Arch de med chirug y especial 922, x, 56
- Histologic changes in the internal organs and their relation to fatal gas gangrene F F SASSOJIST Staats erlag, Petrograd, 922, x, 244
- A case of extensive gangrene due to burning with copper sulphate M THAL Ztschr f aertl Fortbild 922, x, 599
- Sera, Vaccines, and Ferments
- A new principle of therapeutic immunization S WAGNER Med Press 922, lxxv, 49
- Bacteriotherapy in acute localized infections R. PELLIS Bull et mem Soc med d hôp de Par 922, x, 5
- The use of antipneumococcal serum in the treatment of the complications of gonorrhea A S WALLER Med J Australia, 922, x, 73

The use of intramedullary fixation of fractures in the treatment of fractures of the femur. *Am J Orth Surg* 1934, 17.

### Blood

Observations upon the blood flow in man. *N Engl J Med* 1934, 110, 31.

On the medico-legal importance of the blood groups. *Q J Med* 1934, 27.

The influence of diet on blood groups. *J Hygiene* 1934, 33, 1.

Blood destruction during exercise. Blood changes occur in the course of a single day of exercise. *Q J Med* 1934, 27, 1.

The pigment in the blood. *Am J Hygiene* 1934, 33, 1.

The histological content of the blood in an animal in relation to splenic action. *W Med* 1934, 33, 1.

A uric acid hypothesis as to the cause and cure of gout. *Am J Med* 1934, 17, 1.

Chemical changes of the blood after the influence of drugs. *Am J Med* 1934, 17, 1.

Thrombosis due to effort. *Q J Med* 1934, 27, 1.

Endothelium of the brachial artery. *J Hygiene* 1934, 33, 1.

### Blood and Lymph Vessel

Prognosis regarding high blood pressure. *Am J Med* 1934, 17, 1.

Some considerations on blood pressure. *J Hygiene* 1934, 33, 1.

Essential arterial hypertension. *J Hygiene* 1934, 33, 1.

The causes and treatment of high blood pressure. *Am J Med* 1934, 17, 1.

Arteriosclerosis and hypertension. *J Hygiene* 1934, 33, 1.

A case of intraperitoneal aneurysm of the aorta. *Am J Med* 1934, 17, 1.

A case report of ductless aneurysm of the aorta. *Am J Med* 1934, 17, 1.

The diagnosis of perforation of the aorta and the superior vena cava. *Am J Med* 1934, 17, 1.

A case of retroperitoneal rupture of the abdominal aorta due to trauma and not followed immediately by death. *Am J Med* 1934, 17, 1.

A case of aneurysm of the abdominal aorta with symptoms of shock. *Am J Med* 1934, 17, 1.

A case of traumatic aneurysm of the spleen. *Am J Med* 1934, 17, 1.

A case of compression of the right arm by an abnormally large coccyx. *Am J Med* 1934, 17, 1.

Operation for varicocele. *Am J Med* 1934, 17, 1.

Essential aneurysm of the aorta. *Am J Med* 1934, 17, 1.

Transcatheter rupture of the femoral artery. *Am J Med* 1934, 17, 1.

Surgery of the arteries. *Am J Med* 1934, 17, 1.

The Nagel method. *Am J Med* 1934, 17, 1.

8. *Am J Med* 1934, 17, 1.

The relationship between the clinical laboratory and the physician. *Am J Med* 1934, 17, 1.

The significance of pH and chemistry for surgery. *Am J Med* 1934, 17, 1.

The chemistry and chemically diagnostic laboratory. *Am J Med* 1934, 17, 1.

Correlation of physiology and surgery. *Am J Med* 1934, 17, 1.

Correlation of pathology and medicine and surgery. *Am J Med* 1934, 17, 1.

Alkaline for the development of pathology. *Am J Med* 1934, 17, 1.

The use of the microscope in application to pathology. *Am J Med* 1934, 17, 1.

The diagnosis of the cause of disease. *Am J Med* 1934, 17, 1.

The status of the patient. *Am J Med* 1934, 17, 1.

The importance of the physical diagnosis in the general practitioner. *Am J Med* 1934, 17, 1.

The diagnosis of acute myocardial infarction. *Am J Med* 1934, 17, 1.

The diagnosis of the adrenal in epilepsy. *Am J Med* 1934, 17, 1.

The diagnosis of the adrenal in epilepsy. *Am J Med* 1934, 17, 1.

The diagnosis of the adrenal in epilepsy. *Am J Med* 1934, 17, 1.

### Radiogenology and Radiant Therapy

Modern practice in the use of X-rays. *Am J Med* 1934, 17, 1.

Protection in radiology. *Am J Med* 1934, 17, 1.

Radiation burns and the use of X-rays. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

The use of X-rays in the treatment of disease. *Am J Med* 1934, 17, 1.

- post-mortem tract I LAYTON J Am M Am 9  
1924, 3074 [249]  
Radium combustion therapy I GUDERN Klu  
Wichita 9 2, 1, 658  
Treatment of malignant disease by radium the X ray  
and electrocoagulation G F FRANKLIN Internat J  
Surg 922, XXXV 4 3

### Hospitals: Medical Education and History

- Hospital records R C KNOWLEDGE and G RASE  
Canadian Pract 9 XLIV, 536  
The present status of surgery and the hospitals in  
South Georgia A D LITTLE J Med Am Georgia, 9  
21 47  
Full time clinical departments G DOCK South M J  
1924, XV 3  
Lady anatomical instruction at Edinburgh J D  
COWAN Edinburgh M J 92 XV 75  
The use of full time teachers in clinical medicine G C  
ROBINSON South M J 9 2V 009

- Postgraduate medical study in London I F HORN  
Kentucky M J 9 2V, 86  
Concerning university extension postgraduate medical  
work C H M FR PERRY and M J 92 XVI  
40  
Changes that have occurred in the past twenty five  
years having an effect on the progress of medicine A W  
MASTERS Boston M & S J 9 2, 127, 82  
Lord Ister and his priceless gift to man J A H  
MAY JR J Med Am Georgia, 10 21 473  
The progress of surgery and the rise and fall of surgical  
operations J BRAX Internat J S 9 2, 435  
Some outstanding features of recent progress in surgery  
G THORNTON California Stat J M 92 22, 43

### Legal Medicine

- The medicolegal application of human blood grouping  
Sources of error in blood group tests, and criteria of reli-  
ability in investigations on heredity of blood groups  
R OTTENBACH J Am M Am 9 2, 1221, 37

## GYNECOLOGY

### Uterus

- Retroversion of the uterus M DALCOURT Prog de la  
clin Madrid, 9 2, XXX 330  
The present status of the surgical treatment of uterine  
prolapse F C WITMER J Michigan State M Soc 9  
22, 505  
An improved method of supporting the bladder and  
vagina after vaginal hysterectomy for procidentia A  
HARRINGTON Am J Obst & Gynec 9 2, IV 654 [250]  
Restoration of the round ligaments A J NEVILL  
Brit M J 92 11, 8  
Hemorrhagic metropathies A CASTANO Semer  
med 923, XXX, 45  
Lat. uterine syphilis and metrorrhagia J M CHOTTE  
Rev franç de gynéc et d'obst 9 3 14, 9  
The use of radium in the treatment of uterine bleeding  
other than cancer H B MATTHEWS N York Stat J M  
923, XXX, 356  
The situations of terrene myomata and the structure  
of the female genital organs A ROSSIGNOL Gynec et obst  
923, VI, 305  
Five specimens illustrating retrograde changes in the  
breasts associated with pregnancy I LYNN J Obst &  
Gynec Brit Emp 9 2, XXX 630  
Statistics and technique in the treatment of fibromas  
of the uterus by radiotherapy J A CORSCADON Am J  
Roentgenol 9 2, 12, 8 [251]  
What is the best method for the treatment of uterine  
fibromyomata by means of the roentgen rays? M DECHERIE  
Am J Roentgenol 9 2, 12, 797 [251]  
Uterine fibromata requiring operation VITALAZA Med  
liber 9 2, VI, 4  
The scope and technique of myomectomy V BOWEN  
Proc Roy Soc Med Lond 9 2, XVI, Sect Obst &  
Gynec  
The indications for and the results of, myomectomy for  
uterine fibroids A E GILES Proc Roy Soc Med  
Lond 92 2, XVI, Sect Obst & Gynec 3  
A large fibroid of the cervix developing after subtotal  
hysterectomy A E GILES Proc Roy Soc Med Lond  
922 2, XVI, Sect Obst & Gynec  
Supra pubic hysterectomy H HARTMANN Gynec  
et obst 923 VI, 77

- Observations on cancer of the cervix L D VAN RHODE  
Island M J 92 335 [251]  
Transverse myelotomy for pelvic neuralgia due to in-  
operable terrene cancer LEBLANC Lyon chirurg 9  
21 67  
Technical questions in the roentgen treatment of car-  
cinoma of the cervix P DELBOVO Actinotherap, 923,  
21 57  
Chemotherapy in cancer of the uterus F MACALUSSE  
Rev franç de gynéc et d'obst 92 2, 467  
The surgical effect of the hypogastric ganglion and  
nerves of the uterus A LATARJET and P ROCHET Lyon  
chirurg 9 2, 214, 583  
Regional anesthesia of the uterus C COTTE Presse  
med Par 9 3, XVI, 56

### Adnexal and Peri Uterine Conditions

- Acute and chronic salpingitis and treatment J L  
SAYLES J Oklahoma State M Am 9 2, XV 355  
Pyosalpinx opening into the urinary bladder operation  
core LUTHERSON Epithel, 9 21 304 [252]  
Tuberculous salpingitis opening into the bladder G VET  
L on chirurg 92 2, 630  
The Rohen test and its therapeutic application J C  
HINK and C MARTIN Am J Obst & Gynec 9 2, IV,  
628 [252]  
Does the ovaria corpus luteum control the ovarian and  
uterine cycle H SCHILLER Am J Obst & Gynec 92,  
IV 6 [252]  
A persistent corpus luteum cyst as the cause of hypertrophy  
of the lining of the uterus A H CURTIS Surg Gynec  
& Obst 9 2, XXXV 830  
Adenocystoma of the ovary E W BERTNER Texas  
State J M 922 XVII, 35  
Fibroma and sarcoma of the ovary A report of two  
unusual ovarian tumors J V MASON Boston M & S J  
923, 2, 127, 952 [253]

### External Genitalia

- Hydrometra associated with absence of the vagina and  
genital tuberculosis D DOUGAL J Obst & Gynec Brit  
Emp 9 2, XVI, 634





Fatal case of postpartum eclampsia associated with accidental hemorrhage F IVINS J Obst & Gynec Brit Emp 922, xxx, 637

Nodular erythema in the puerperium E GUINZAR Rev méd de la Suisse Rom 9 2, xii, 706

Pyelitis in the puerperium A ROGERS Ohio State M J 922, xviii, 825

A serious puerperal complication, gangrene of the leg A DE MORAES Rev de gynec d'obst 922 xvi, 475

Postabortal hemolytic streptococemia P F WILLIAMS Am J Obst & Gynec 9 2, iv, 636 [159]

The provocation of crises in severe puerperal infection by the intravenous injection of antistreptococcal serum KIRKLAND and MILES Bull etudes Soc méd d hôp de Par 922, xli, 504

Anti streptococcal serum in puerperal infection W LUTON Med J Australia, 922, ii, 673

Mastitis puerperalis E D MARTIN Surg Clin N Am 9 2, 1463

## Newborn

Cranial stress in the fetus during labor and on the effects of excessive stress on the intracranial contents E HOLLAND J Obst & Gynec Brit Emp, 922, xxx, 55

Dehydration in the newborn H BARKIN and C GOM Am J Dis Child 922, xxiv, 497, 506

Orifices media in the newborn MARI and CARRI Gynec et obst 922 vi, 3, 5

Fetal tetanus in child W H GREENMAN J Am M Ass 922, lxxxi, 500

Epiphyseal slipping of the upper end of the humerus suggesting obstetrical paralysis J M JORDAN Bol y trab Soc de ciruj de Buenos Aires, 922, vi, 93

The value of routine determination of bleeding and coagulation times upon newborn infants M WATKINS Minnesota Med 922, v, 7, 8

Feeding the newborn infant W N BRADLEY Therap Gaz 922, xlvii, 7

## GENITO-URINARY SURGERY

### Adrenal Kidney and Ureter

The dangers of pyelography clinical and experimental investigations on their prevention LEROUX Zschr f urol Chir 92 2, 420

The surgical diseases of the kidney in the roentgenogram E JOHNSON Zschr f urol Chir 922, x, 5

The relationship of the anatomical and pyelographic findings in the surgical diseases of the kidney M GRADMAN Zschr f urol Chir 9 2, 545

Experimental investigations on the deposit of fat in the kidney of the rabbit O M CAGIAN Deutsche Zschr f Chir 922, cxxxi, 6

Abnormalities of the kidney and ureter case of double kidney and double ureter, with review of the literature C M HARRINGTON, T H BROWN, and H A DECKER J Urol 922, viii, 459 [266]

Report of case of bifurcation of the renal pelvis L A WEST J Am M Ass 9 2, lxxx, 95

Pathologic complications with duplication of the renal pelvis and ureter (double kidney) W F BRAASCH and A J SCHOLL J Urol 9 2, viii, 507

The diagnosis of horseshoe kidney F KRAFT Fortschr d Geb d Roentgenstr 9 2, xxx, 806

Three cases of typical horseshoe kidney O MORI Zschr f Dermatol u Urol 92 2, 50

The nature and significance of renal steas E G CRANFORD Surg Gynec & Obst 19 2, xxv, 733 [266]

New theories regarding the arterial supply of the kidney M SERRA Prog de la clin Madrid, 922, xxv, 90

The chemical aspect of intrarenal sacculations P J WESS Zschr f urol Chir 922, x, 30

Massive renal hemorrhage H ROBERTUS Zschr f urol Chir 9 2, 333

The treatment of renal infections by arterial water and bath I KROCH N York M J & Med Rec 922, cxxv, 700

The prognosis and treatment of chronic renal disease H NACLES Brit M J 922 ii, 507

Experimental research on pseudo-hydrophrosis G KAZEMOV Arch ital di chir 922, vi, 355

Hydrophrosis K FRAVY and R GLAS Zschr f urol Chir 9 2, 775

Remarks on hydrophrosis of the three branched renal pelvis and on the nature and form of the renal pelvis W O GU Zschr f urol Chir 922, x, 5, 9

Chronic interstitial nephritis in childhood renal infarction H L WATSON Winton Edinburgh M J 9 2, xxx, 500

The anatomy of chronic nephritis G R BROWN and G M ROTH Arch Int Med 9 2, xxx, 8, 7

The extension of albumin in chronic nephritis A HAYES Prace med Par 922, xxx

A physiological consideration of nephritis O A CLARK Pennsylvania M J 922, xxvi, 144

Some observations on protein L A MITCHELL J Oklahoma State M Ass 922 xv, 353

The resection of various tumors of the renal pelvis and ureter H BRUNDT Zschr f urol Chir 9 2, 500

Tuberculosis of the kidney J Z MEAT J Oklahoma State M Ass 1922, xv, 345

The urinary and renal findings in renal tuberculosis C SEIDENFELD Zschr f urol Chir 922, x, 84

Dialysis in the treatment of tuberculous kidney C T STOLZ Med Herald, 1922, xli, 31

A further contribution on the technique and clinical importance of nephrectomy in tuberculosis of the kidney T COHN Zschr f urol Chir 922, ix, 20

The modern diagnosis and the differential diagnosis of renal and ureteral stones W ISRAEL Ergänz d Chir Orthop 9 2, xv, 506

Pyelotomy for renal calculus A DI BLASIO Polclin Rome, 9 2, xxx, xxx, 22, 5

The question of recurrent renal calculus J D BARNET Surg Gynec & Obst 922, xxv, 743 [261]

Nephrolithotomy and pyelolithotomy A POWSON Rev Assoc med Argent 922, xxxv, 571

Obstruction of the common bile duct and ureters due to solitary cyst of the kidney O HERRER München med Wchnschr 922, lxx, 579 [262]

Congenital cystic kidney W MEYER Ann Surg 92 2, lxxv, 789

The clinical aspect of renal tumors K SCHMIDT Zschr f urol Chir 19 2, 285

The treatment of hypernephroma with solitary metastases F COSSACK Zschr f urol Chir 922, x, 14

Vascular complications and their control in hypernephroma E KIRCH Zschr f urol Chir 9 2, x, 126

A primary cancer of the right kidney with voluminous metastases in the left pleura C ROSENZ J d urol med et chir 19 2, x, 285

- The partially transperitoneal and partially extra peritoneal operation on the kidney: extraperitoneal operation after dissection of the peritoneal sac. F. OSTERLINDER. *Zschr f urol Chir* 922, 5, 51 [1962]
- A case of suprapubic urinary opening upon the rectum. N. JOSEPH and L. J. CHANG. 922, 12, 602
- Suprapubic ureters: with extraperitoneal openings. H. D. FURNESS. *J Urol* 922, 102, 491 [1962]
- Report of a case of extreme dilatation of the ureter. T. I. LAURE. *J Urol* 9 101, 40 [1963]
- A case of cystic enlargement of the renal extremity of the right ureter and its treatment. J. RACINET. *Zschr f urol Chir* 9 12, 19 [1961]
- Obstruction of the ureter: the most frequent predisposing cause of the localization of bacteria in the pelvis of the kidney. C. A. HILL. *Am J Surg* 9 2, 1000, 480
- A clinical study of ureteral stones. H. von LAMBERT. *Zschr f urol Chir* 922, 2, 205
- Primary tumors of the ureter. P. W. ASCHNER. *Surg Gynec & Obst* 1972, 133, 740 [1964]
- Pseudotumors of the papilla of the ureter. F. VICKERS and R. PASCHKE. *Zschr f urol Chir* 9 2, 304
- Primary carcinoma of the ureter. F. BERTH. *Zschr f urol Chir* 922, 2, 31
- Uretero-abdominal fistula. E. REIS. *Surg Gynec & Obst* 9 2, 133, 828
- An experimental study of retrograde menstruation. T. HINATA and A. E. BELL. *J Am Ml Ass* 922, 1000, 9

### Bladder: Urethra, and Penis

- T. cases of rupture of the bladder by pelvic fracture. O. VINCENT. *Bull et mémo Soc méd de hôp de Par* 79, 2, 154, 154
- Gumbar injuries of the bladder. J. P. HARRIS. *Zschr f urol Chir* 1922, 2, 215
- The removal of broken-off catheter projecting into the bladder from the urethra by snuffing-out maneuver. F. FRANK. *Deutsche med Wochenschr* 922, 1000, 9
- A case of emphysema of the bladder operated upon by the McNeil-Borel method. F. RAATTEBOOM. *Bull. Min Chir* 9 2, 1000, 4
- Three cases of foreign body in the bladder. J. E. DREW. *J Ml Acct State Ml Ass* 922, 102, 400
- I. suggestions on the physiology and pathology of bladder function: remarks on the pathology of the canal neck. O. SCHRAAG. *Zschr f urol Chir* 92 2, 167 [1964]
- Proctocystography of the bladder. P. ROSENSTEIN. *Zschr f urol Chir* 922, 2, 5
- A quick-acting irrigation connection for the cystoscope. R. DE CLAS. *J Am Ml Ass* 9 2, 1000, 907
- The classical stage of Ascaris cystoscopic methods. L. PROCTOR. *Arch Ital di chir* 1922, 2, 160
- Thoma's sign of the bladder: further report. H. L. KAPPELMAN. *Surg Gynec & Obst* 9 2, 133, 790 [1964]
- The increased size of the bladder and the shrinkage bladder. R. PASCHKE. *Zschr f urol Chir* 9 2, 30
- The treatment of bladder tuberculosis after nephrectomy. E. L. KOTZ. *J N York Stat J Ml* 1922, 100, 352
- The treatment of congenital fistula. P. HARRIS. *Nederl T J Zschr* (General) 192, 100, 074
- Contracture of the neck of bladder. G. PROCTOR. *Arch d Hosp Mém de la Habana* 92 2, 100, 075
- The question of so-called congenital diverticula of the bladder. O. KOTZ and R. SCHLICK. *Zschr f urol Chir* 922, 2, 46
- The treatment of benign tumors of the bladder. P. WITTE. *Zschr f urol Chir* 92 2, 37
- Radical in the treatment of slow growth of the male bladder: convenient and effective method utilizing an

- open air cystoscope. W. NEILL. *J Am Ml Ass* 19 2, 1000, 206
- A new method of applying radium by means of the cystoscope. L. BERNARD. *Rev Soc Méd Argent* 19 1000, 400
- Some observations in the prostatic urethra. C. H. SCHMIDT. *J Urology* 1922, 10, 495
- The clinical aspects of operat. treatment of stones in the prostatic urethra and cure of spontaneous perforation of large stone through the urethra. J. WAINZ. *Zschr f urol Chir* 9 2, 304
- Urethritis due to bacillus pyocyaneus. A. CALVARI and M. URS. *J urol med et chir* 9 2, 100, 200
- The treatment of chronic urethritis with pen. action. J. CASTO. *Deutsche med Wochenschr* 922, 1000, 39
- Internal polysectional urethrotomy. J. N. POUSSIN. *Revue Méd* 9 2, 1000, 015
- Cystic polyps and papillomata of the urethra. S. GOTT. *Zschr f urol Chir* 19 2, 10, 45
- The treatment of hypospadias by pen. method. U. CASPER. *Arch Ital di chir* 922, 10, 277
- Inoperable urinary vesicle. E. L. WAINZ. *J Massachusetts Ml Ass* 9 2, 100, 400

### Genital Organs

- Absence of the prostate: associated with endocrine disturbance. H. LUBKE. *California State J Ml* 9 2, 100, 430
- Interesting cases of prostatic atrophy diagnosed as prostatic hypertrophy. R. BROWN. *Br. Med J* 9 2, 100, 33
- The treatment of prostatitis. D. W. MACKENZIE and M. J. SENE. *Canadian Ml Ass J* 92 100, 819
- Experiences with the perineal operation for prostatic abscess and prostatic stones. E. FISHER. *Zschr f urol Chir* 922, 12, 300 [1964]
- Infections of prostatic adenoma. LAURE. *Arch d mal d reins et d organes génitales* 9 2, 100, 30 [1963]
- Prostatectomy in two stages. A. F. O'NEIL. *Br J Urol* Soc de Chir de Buenos Aires 92 10, 920
- The after treatment of suprapubic prostatectomy. R. ROSENSTEIN. *Zschr f urol Chir* 19 2, 213
- Shortening of the treatment after prostatectomy by penury complete closure of the bladder. I. BORAS. *Zschr f urol Chir* 9 2, 3
- Parkinson's disease and the hernia operation. J. SEALA. *Canop Ml Rev* 92 100, 373
- A solution (epididymectomy) b. Steinach method with Warr restitutions in cases of venous and arterial (hypotension) depression. A. SAND. *Arch Chir Grand* 1922, 10, 377
- Testicular dislocation of both testicles. C. I. G. LARSEN. *California State J Ml* 9 2, 100, 300 [1963]
- A congenital defect of the anterior abdominal wall and cryptorchidism: report of two cases. J. G. MALLORY and F. P. HERRICK. *J Missouri Ml Ass* 12 10, 92 100, 443 [1964]
- The clinical aspect of the treatment of cryptorchidism. R. KAPPELMAN. *Zschr f urol Chir* 92 2, 304
- The behavior of the testicle after laparotomy of the spermatic vessels: in the exception of the an. deferens and the deferential art. in L. GOTT. *Arch Ital di Chir* 1922, 100, 617
- Tuberculosis of the testis: a study. J. ELLIS. *Br J Am Ml Ass* 100, 1070
- Radical and conservative treatment in metastatic testicular tumors. H. H. BOWEN. *J Radiol* 41 10 [1964]
- The treatment of a chorion. F. F. DEB. *Br Med Wochenschr* 9 2, 100, 38

## Miscellaneous

- On some urinary methods of diagnosis J ROSENBLUM  
N York M J & Med Rec 922, cvii, 696  
Accurate chromocytoscopy PRLIMER Zisch f urol  
Char 921, 245  
A note on the urea content of the cerebrospinal fluid  
with special reference to the diagnosis of anaemia in infant  
J S AMERSON Lancet 921, cccii  
A case of hematuria due to strongyloides intestinalis  
P FORNARA Pochin Rome 923, rxx, sex part 75  
Some investigations into cause of paroxysmal hemo-  
globinemia L S HALL IX and J R R IX Lancet 921,  
cccii, 7

- Staphylococcus glycyrrhiza J L H IX Act med Scand  
9 IX, 88  
Urinary calculi T F LAURIE N York Stat J M  
923, xxii, 549  
Calculus anuria report of case D N EISENDRATH  
J Am M Am 9 IX, 3037 [267]  
T unusual tumor findings in the upper excretory  
urinary passages P JAMISON Zisch f urol Char 921,  
ix, 474  
The relation of calcified abdominal glands to urinary  
surgery J T WALSH Lancet, 9 cccii, 3 [268]  
The present status of local analgesia in operations on the  
urinary organs M HAPPEL Zisch f urol Char 9  
IX, 5

## SURGERY OF THE EYE AND EAR

## Eye

- Ophthalmic progress in Egypt A F MACALL Brit  
M J 921, 24, 59  
Review of the work of the venereal disease center of the  
Glasgow Fy Infirmary E J FERGUSON Brit M J  
921, 24, 303  
The relation of anaphylaxis to the practice of eye sur-  
gery, nose, and throat H F MORRISON Nebraska Med M J  
921, 24, 46  
Partial report of examination of the eyes, ears, nose, and  
throat of patients in the Eastern Kentucky State Hospital  
J A STONE Kentucky M J 921, 24, 855  
The eye and its relation to internal medicine W L  
ALLEN Nebraska State M J 921, 24, 424  
The internal secretions in ophthalmology I Po ALL  
Fetich Spain 921, 24, 305  
Auto-ophthalmoscopy S I ESTER Am J Ophth 9  
923  
Test types H HARTINGER and H B OWL Brit J  
Ophth 921, 24, 543  
Investigation of the myograms etc in case of congenital  
myopia H H VAI Laryngoscope 923, 24, 95  
The cause and prevention of blindness A LA 20  
Lancet 921, cccii, 59  
Preliminary contribution on injury cause of  
diabetes insipidus with bitemporal hemianopsia C  
PASCAREY Brit J Ophth 923, 24, 549 [269]  
The education of partially blind children in the eye  
classes H W THOMSON Brit M J 921, 24, 57  
Conjunctival mucous cyst C J LOVER A RIBON, and  
A P CH ARAGO Seph med 923, 24, 6  
Conjunctival artefacts H CALDER Brit M J 921,  
24, 304  
An X-ray demonstration of the nasolacrimal passage  
eye-normal and obstructed H P DICK and J M  
CALDER J Radiol 921, 24, 5 [269]  
I injuries to the eyeball with report of few cases J B  
McPHERSON Nebraska Med M J 921, 24, 434  
Inverted tumor of the orbit G M F WARD Arch ophth  
di char 923, 24, 333  
Newer views in the treatment of toxic optic atrophy  
E R GIFFORD Nebraska M J 921, 24, 408  
Ocular tuberculosis A L WHITEHEAD Brit J Ophth  
921, 24, 539  
Tuberculosis of the eye J J BRYCE Pacific Coast J  
Ophth 921, 24, 35  
The commoner types of ocular tuberculosis W L  
CARR Minnesota Med 921, 24, 79  
Clinical observations on the cornea R VON DREH II NY  
M J Ophth 921, 24, 943

- Infection of corneal ker I A M IX Am J Ophth  
921, 24, 97  
A note on case of cataract in child following lightning  
stroke W A COOPER Indian M J 921, 24, 46  
The diagnostic and therapeutic use of cal pigment in  
myopia of the uvula tract and sympathetic ophthalmia  
A C WOODS and A HARRY Bull Johns Hopkin Hosp  
Bull 923, 24, 49 [269]  
Cataract extraction with iridectomy R P RATNICKER  
Indian M J 921, 24, 337  
Ocular chorioid of Chloquet with persistent hyaloid artery  
H W C KLETT Am J Ophth 921, 24, 94  
Extraction of the vitreous in ocular therapeutics J  
BUTTERBA and S CHL Prog de la clin M dnd,  
921, 24, 4  
Four cases of bromethane glaucoma treated with the  
Ym L Ba VII Actinotherapy 921, 24, 70  
The cerebrospinal fluid in disease of the fundus W J  
W LECTON Brit M J 921, 24, 49  
The relation of the optic nerve to the ophthalmic and  
posterior ethmoidal sinuses G VORL Brit M J 921,  
24, 58  
Discussion on the etiology of optic nerve atrophy C O  
HALLIBROOK J H PRINGLE, and H M T WELSH Brit  
M J 921, 24, 33  
A case of ophthalmic migraine with unusual symptoms  
A R WOODS Brit M J 921, 24, 56  
Retinitis proliferans of syphilitic and diabetic origin  
A L RALL Am J Ophth 921, 24, 946  
The significance of the vascular and other changes in the  
retina in arteriosclerosis and renal disease H B S  
Med Press 921, 24, 456  
The burning of eyes cases I KINCHAM Trained Nurse  
& Hosp Rev 921, 24, 35

## Ear

- Deafness from impaction S O DAVIS Ken  
tuck M J 921, 24, 534  
The relation of the nose and throat to ear disease G  
L SCHWARTZ Illinois M J 921, 24, 43  
A lesson in the prevention of essential deafness M  
A. MILLER Lancet 921, cccii, 67  
Acute otitis media in children C G BARD N York-LA  
Med M J 921, 24, 49  
Vaccinotherapy in otorhinolaryngology J H WARD  
Tr. Br. Med. Soc 921, 24, 8  
Memoranda of otitis media C F YERGEN J Am M  
J 921, 24, 924  
Latest otosclerosis H I Med Press 921,  
cccii, 4

## SURGERY OF THE NOSE, THROAT AND MOUTH

## Nose

- Rhinoplastic N A NICHOLAYEV Med rev 922, xxxix, 1
- Metal trays and cobbler's spiral dressings I F S Egan. *Marches med & chirurg* 1922, lxxx, 24 [271]
- Lower half beards (anurhops) of nasal origin. G SUTHER. *J Am M Ass* 922 lxxx, 1898
- A case of chronic rhinitis treated by radium W H B AUSTIN. *Canadian M Ass J* 1922, xii, 897
- Otic pyrrhoe without stapes thrombosis E M SWINELL. *Ann Otol Rhinol & Laryngol* 922, xxxi, 869
- Some physical intranasal conditions favoring involvement of the nasal accessory sinuses. M. MEYERHART. *Ohio State M J* 922, xvi, 877-843
- The relationship between chronic suppuration, nasal stenosis, and polypoid infections E M SWICK. *Texas Med J* 922 xviii, 408
- The treatment of accessory nasal sinus disease in children. H B LILLIE. *Nebraska Stat M J* 922, vi, 402
- The treatment of disease of the accessory nasal sinuses H I LILLIE. *Ohio State M J* 922, xvii, 834
- Report of case of bilateral frontal sinus expansion, subdural and supratentorial abscess, with recovery. H B WATTS. *Laryngoscope* 922, xxxii, 964 [271]
- The treatment of frontal sinus disease and complications A G LOWERY. *Nebraska State M J* 922, vi, 430
- Total blindness of both eyes in a boy 7 years of age cured by an ethmoid operation and opening of the sphenoid sinus D A HICK. *Laryngoscope*, 922, xxxii, 874 [271]

## Throat

- Observations on some throat conditions in children. L BOND. *Canadian M Ass J* 922, xii, 89
- Focal infection in the tonsils of adults suffering from syphilis and chronic parotitis denture R B FRYZHOOT. *Canadian M Ass J* 922, xii, 860
- A tonsil enucleator D J JONES. *Laryngoscope*, 922, xxxii, 960
- An illustrated forceps and tracheotomy for tonsillectomy G R MARSHALL. *J Am M Ass* 922, lxxx, 966

The safeguarding of the tonsil and adenoïd operation O FERRISS. *Am J M Sc* 1922, clxiv, 834

My observations after six years of constant use of the Stader method for tonsillectomy E J BRIN. *Laryngoscope*, 922, xxxii, 901

The palatotomy aspect of tonsillectomy under general anesthesia M C ALLEN. *Laryngoscope*, 1922, xxxii, 924

The clinical importance of obstruction of the stylohyoid ligament B LUTHERS. *J Am M Ass* 922, lxxx, 921 [271]

Laryngofistula is laryngeal tuberculosis HUGGESS. *Zucker's Laryngol Rhinol u i. Grenzgeb* 1922, xi, 5

Notes on peroral endoscopy and laryngeal surgery C JACOB. *Laryngoscope*, 922, xxxii, 966 [272]

A case of foreign body (fish) in the air passages removed by laryngotracheostomy. M Po Pe. *Indian M Gaz* 922, lvi, 457

## Mouth

Some physiological aspects of oral hygiene W A JACQUES. *Dental Cosmos* 922 liiv, 303

Oral diagnosis B H SMITH, J. *Dental Cosmos*, 1922, liiv, 312

A case of oral sepsis G STEELE PERKINS. *Lancet*, 922, cccc, 353

Two cases of buccopharyngeal prolapse A MAXIMS. *Severian med* 1922, xxxi, 921

A case of tubercular parotitis limited with apparent success by radium G L FRYSLER and G P WIDMAYR. *Am J Roentgenol* 922, lx, 794 [272]

516 xry calculus of the submandibular and sublingual glands L WATTS. *Internal J Orthodont* 1922, iii, 400

Tuberculosis of the salivary glands AUSTON. *Ann. rad. elect* 922, 2, 478 [272]

Mandibular ankylosis: report of case and treatment ARDY and GORDON. *Dental Cosmos*, 922, liiv, 307

The value of dental vaccination in general medicine B S GARDNER. *Canadian Pract*, 922, xlviii, 243

Which tooth should be extracted? A D BLANCH. *J Am M Ass* 922, lxxx, 89

# International Abstract of Surgery

*Supplementary to*  
**Surgery Gynecology and Obstetrics**

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## CONTENTS

I	Authors	ii
II	Index of Abstracts of Current Literature	ii
III	Editor's Comment	x
IV	Abstracts of Current Literature	289-390
V	Bibliography of Current Literature	391-406



# CONTENTS—MAY, 1923

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

- GRANT, A. R. No-Hand Touch Technique 289  
 HOWARD, C. A. That Beneficial Cathartic After Abdominal Operations 289  
 GRANT, F. R. Posterior Vaginal Drainage With Description of New Instrument Used as Vaginal Pelvic Guide 304  
 FRANK, R. T. The Treatment of Cystocele, Rectocele, and Uterine Prolapse 304  
 REED, E. and ROWITZER, P. The Cause and Prevention of Secondary Hemorrhages After Hysterectomy 370

##### Anesthetics

- CATTELL, M. Studies in Experimental Traumatic Shock. The Action of Ether on the Circulation in Traumatic Shock 289  
 BARRY, J. D. and BARON, W. M. A Study of Anesthetics in Prostatectomy 383

#### SURGERY OF THE HEAD AND NECK

##### Head

- D'FAMO, C. Herpetic Meningo Encephalitis in Rabbits 290  
 KNOX, W. The Picture of Hypophyseal Cystitis 29  
 THOMSON, J. E. Atypical Plastic Operations for Compound Fractures of the Lip and Palate 29  
 McWILLIAMS, C. A. and DUNNING, H. S. Rhinoplasty and Cheek, Chin and Lip Plasticity with Tubed, Temporal Plicated Forehead Flaps 293  
 T. CHANG, I. R. The Radium Treatment of Carcinoma of the Mouth 294  
 SCHROEDER, F. E. Carcinoma of the Tongue Treated by Embedding Glass Ampoules Containing Radium Emanation 294  
 BLACKWELL, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route 388  
 GROVE, W. E. Mishaps in the Puncture and Irrigation of the Maxillary Sinus 388  
 BLACKWELL, H. S. Carcinoma of the Antrum of Highmore 389

##### Neck

- GLUCK, O. Abscesses Descending From the Upper Air Passages 294

- LARRY, F. H. Tuberculous Glands of the Neck and Spinal Accessory Paralysis 293  
 HERTZLER, A. E. The Technique of Thyrotomy 295  
 JACKSON, C. Cancer of the Larynx 295  
 GORDON, A. S. and CAYTON, H. D. Histologic Study of the Effect of Ligation of the Thyroid Vessels in Esophagolaryngeal Cancer 296  
 TARRAUDRANT, Goetlich's Test and Radiotherapy in Diseases of the Thyroid 297  
 WHITE, P. A. Surgery of the Thyroid Gland 297  
 MARTIN, E. V. The Blood Supply of the Thyroid Gland and Its Surgical Significance 298  
 SACCI, F. Tetany After Hemisternectomy 298

#### SURGERY OF THE CHEST

##### Chest Wall and Breast

- WRIGHTSON, W. Two Unusual Cases of Empyema 299  
 HENDERSON, C. A. Recent Progress in the Treatment of Chronic Empyema 299  
 JERSON, W. Tumors of the Breast 299  
 STROHMEIER, L. W. Remarkable Freedom from Local Recurrence Following Chemical Removal of Advanced Cancerous Breast 300  
 LEE, B. J. Results and Technique in the Treatment of Carcinoma of the Breast by Radiation 30  
 KILGORE, A. R. Tumors of the Breast Arising During Pregnancy and Lactation 308

##### Trachea and Lungs

- LEONARDSON, A. The Operation for Traumatic Hemorrhage of the Lung 30  
 COLEMAN, E. C. The Etiology of Postoperative Pulmonary Complications 30  
 HEUSER, G. J. and MACGILLIVRAY, P. M. Lung Abscess 30  
 LOCKWOOD, A. L. Lung Abscess 30  
 MYERS, W. The Establishment of Temporary or Permanent Pulmonary Lip Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess 30  
 LIPSON, W. S. The Interrelationship and End Results of Chronic Suppurative Diseases of the Lung 303  
 RICHARDS, P. H. Reflections upon Nine and One Half Years' Experience with Artificial Pneumothorax 304  
 D'VIA, H. M. Surgical Treatment in Cases of Pulmonary Tuberculosis 304





GREENOW, I. I. Surgery of the Pancreas: The Diagnosis and Treatment of Primary Carcinoma of the Pancreas, Particularly of the Body and Tail of the Gland 37

CARLEMAN, J. KETTEL, E. H. and DALRYMPLE, K. Discussion on the Surgical Treatment of Non-Traumatic Affections of the Spleen 338

HAGGARD, W. D. Sarcoma of the Spleen 338

#### Miscellaneous

BRADY, L. Mesenteric Vascular Occlusion 339

McIVER, M. A. Torsion of the Greater Omentum 339

FATMAN, J. R. A Safe Method for Drainage of Extra Abdominal Abscesses 339

#### SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc

BLOODGOOD, J. C. The Diagnosis and Treatment of Bone Lesions: A Brief Summary of the Salient Features 339

WELLS, The Traumatic New Formation of Bone Myositis Ossificans and Periosteal Bone Cysts 33

BLOODGOOD, J. C. Bone Cysts (Osteitis Fibrosa) Variety—Polycystic Osteitis Fibrosa 33

BLOODGOOD, J. C. Bone Diseases—Osteoporosis or Leprosia from Fixation and Non Use 33

GLOVER, D. M. Osteomyelitis: Report of Cases with Roentgenograms of Eleven Different Fractures in the Same Patient 33

DAVIS, G. O. Osteosclerosis: Frigida Generalisata Marfanosa—Alberti Schoenberg Disease 333

CHOWRIKAR, R. K. A Case of Congenital Osteosclerosis 333

COVE, S. M. The Pathology of Osteitis Deformans Paget's Disease 333

WHITE, E. P. C. Osteitis Deformans in Monkey 334

FRIDBERG, A. H. Osteochondritis Deformans 334

WINSLOW, N. Suppurative Osteomyelitis Due to the Colon Bacillus 334

THOMPSON, J. E. Tumors of Bone 334

BLOODGOOD, J. C. Bone Tumors, Metastases to the Lungs from Pure Myositis 335

II NARY, O. S. Multiple Myeloma 335

BROWN, K. P. Solitary Cyst in the Humerus 335

STEWART, M. J. A Large Myeloid Sarcoma of the Radius in Which the Tumor Is White Through out 335

JEAN, G. Brachydactylia Due to Congenital Shortening of the Metacarpals 336

II VORSEY, M. S. Chronic Non Inflammatory Lesions of the Knee Joint 336

MARTIN, W. Scaric Nodules and Its Relation to Flat Foot 337

MORT, T. B. W. Isolated Disease of the Scapoid 337

#### Fractures and Dislocations

YOUNG, A. A Five-Year Survey of the Routine Treatment of Fractures by Operative Methods 338

EDMUNDSON, G. II The Temporary Plating of Fractures of the Long Bones 338

CAMPBELL, W. C. The Treatment of Ununited Fractures 339

DORR, D. The Treatment of Ununited Fractures by Bridge Grafts 339

V. V. HOOK, W. Fracture Dislocations of the Humeral Head 34

CORYMATH, M. Congenital Bilateral Forward Luxation of the Head of the Radius 34

KRAFT, H. B. Dislocation of the Semilunar Carpal Bone 34

BRADFORD, E. H. The Treatment of Congenital Dislocation of the Hip 34

GRAUVE, E. and HAYEM, L. T. Cases of Limited Fracture of the Acetabular Rim in Luxation of the Hip 34

BRADSHAW, M. Fracture of the Femur 343

Surgery of the Bones, Joints, Muscles, Tendons, Etc

ADAMS, W. R. Bone Grafting 34

WEITMAN, A. Observations on the Correction of Deformities of Long Standing 34

McWILLIAMS, C. A. The Efficient Treatment of Acute and Chronic, Simple Traumatic Symovitis (Hemarthrosis and Hyarthrosis) by Repeated Aspirations and Immediate Active Mobilizations without Splinting 34

HOWE, C. Resection of the Distal End of the Ulna for Shortening of the Radius Following Fracture 343

LEON, A. T. Transplantation of the Tensor Fasciae Latae in Cases of Weakened Gluteus Medius 343

MERRILL, T. S. The End Result in Four Cases of Severe Destructive Injury to the Hip 344

COTTON, F. L. Knee Lesions and Operations Based on Personal Cases 344

COOK, A. O. STEIN, W. O. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

COOK, A. O. STEIN, W. O. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

COOK, A. O. STEIN, W. O. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

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COOK, A. O. STEIN, W. O. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

COOK, A. O. STEIN, W. O. and RYDERSON, E. W. Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot 346

#### SURGERY OF THE NERVOUS SYSTEM

ABRAMAMEN, H. I. Injuries of the Nerves of the Arm 35

LEITCH, R. The Indications for Posterior Radicotomy Based on Twenty-Five Cases 350



## OBSTETRICS

## Pregnancy and Its Complications

- ROWLEY, W. N. Observations on the Blood Sugar During Pregnancy and the Puerperium 366
- WELL, W. E. and V. N. A. E. The Sugar Test in Pregnancy 366
- HINTON, W. A. The Wassermann Reaction in Pregnancy 366
- KILGORE, A. R. Tumors of the Breast Arising During Pregnancy and Lactation 368
- McNALLY, F. P. and DISCHENY, W. J. Hemorrhagic Lesions of the Placenta and Their Relation to White Infarct Formation 369
- COTTE, G. The Etiology and Treatment of Tubal Pregnancy 369
- MOORE, W. B. Bacteriology of Fetal Systemic Infections Following Miscarriage or Abortion 369

## Labor and Its Complications

- TELFORD, J. H. Separation of the Symphysis Pubis During Labor 370

SPOTMAKER, J. A. Double Uterus Cesarean Section for the Delivery of Pregnant Right Uterus at Term 370

GREENHILL, J. P. Once Cesarean Section, Always Cesarean Section, an U Truth 371

## Newborn

- HOLLAND, E. Cranial Stresses in the Fetus During Labor and the Effects of Excessive Stresses on the Intracranial Contents 37
- McDONALD, A. L. Repeated Dystocia from Fetal Anomaly in Successive Pregnancies 37
- CROTHERS, B. Injury of the Spinal Cord in Breech Extraction as an Important Cause of Fetal Death and of Paraplegia in Childhood 37
- BACON, C. S. Some Obstetrical Problems Involved in Stillbirths and Deaths of Newborn Infants 37
- GROVES, W. R. Hemorrhage in the Newly Born 373

## GENITO URINARY SURGERY

## Adrenal, Kidney and Ureter

- STEVENS, W. E. Malignant Tumors of the Suprarenal Gland 374
- HARRISON, G. A. and LAWRENCE, R. D. Diabetes in the Blood and Urine as a Measure of Renal Efficiency 374
- SUTTON, M. G. The Action of Hexamethylene Tetrazine 374
- FULLERTON, A. Unilateral Diabetes 374
- LOWERY, O. S. and MULLER, H. R. An Experimental Study of Various Chemicals Used in Pyelography 374
- QUIDRY, W. C. On the Perirenal Incapsulation of Ovary 375
- BRAMCH, W. F. Renal Torsion 375
- MURKIN, A. The Diagnosis and Surgical Treatment of Accessory Kidney 376
- STANTON, E. M. Renal Colic Associated with Urinary Conditions in Women 376
- ESCHENRATH, D. N. Renal Calculi 376
- EXNER, G. The Treatment of Hydronephrosis Caused by Abnormal Renal Vessels 378
- NECKEL, F. The Clinical Picture of Chronic Infectious Diseases Involving the Renal Coverings 378
- BRUCE, H. A. Tumors of the Kidney 378
- REIN, E. and ROETTER, P. The Cause and Prevention of Secondary Hemorrhages After Nephrectomy 379
- LEIBER, T. Immediate Results of Nephrectomy 379

## Bladder, Urethra, and Penis

- LEONHART, C. A Case of Mixed Tumor Epithelioma of the Bladder of Probably Allocated Origin 380
- PARKER, W. B. Bladder Neck Obstructions Their Surgical Relief in Reference to the Young Prostate 380
- FINNEY, L. Associated Closed Traumatic Ruptures of the Posterior Urethra and Bladder 380
- SCHILLER, H. Regeneration of Resected Urinary Bladders in Rabbits 38

## Genital Organs

- SAND, K. Ligation of the Vessels (Epiphymectomy) by Steinhilber's Method as a Means of Rejuvenation in Old Age and in Other Conditions 38
- STANLEY, L. L. An Analysis of 1,000 Testicular Substance Implantations 38
- MACKENZIE, D. W. and SIV, M. I. The Prostatic Problem 383
- BARNET, J. D. and SHERIDAN, W. M. A Study of Anesthesia in Prostatectomy 383
- BEYAN, W. A. Recurrence of the Benign Prostate 383
- SCHNEI, H. R. Castration of the Male by the X-Ray 383

## Miscellaneous

- N. CHOW, B. H. Points in the Technique of Roentgenological Examinations of the Urinary Tract 384
- ESCHENRATH, D. N. Newer Aspects of Urinary Surgery 384

## SURGERY OF THE EYE AND EAR

## Eye

- HOOG, G. H. Pterygia of the Conjunctiva 383  
 STARR, H. H. The Etiology of Sympathetic Ophthalmia 383  
 KRAUSE, A. Metastatic Thyroid Tumor in the Orbit 385  
 BERRY, D. Factors Influencing the Choice of Method for Cataract Extraction 386  
 ELLIOT, R. H. The Macula and Halo of Glaucoma 386

## Ear

- KRAMER, P. D. The Improved Artificial Drum as an Aid to Hearing: A Study of Certain Principles Involved 386  
 LITTLE, H. I. A Septic Type of Temperature Not Referable to the Ear in Cases of Acute Suppurative Otitis Media 387

## SURGERY OF THE NOSE THROAT AND MOUTH

## Nose

- McWILLIAMS, C. A. and DE VRIES, H. S. Rhinoplasty and Cheek, Chin, and Lip Plastics, with Tabbed, Triangular Pedicled Forehead Flaps 393  
 BLACKWELL, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route 398  
 STEIN, O. J. The Intranasal Injection of Alcohol in the Treatment of Hyperosthetic Rhinitis and Some of the Nasal Nevi 399  
 GEORGE, W. F. Malignancy in the Paranasal and Inframaxillary Sinuses 399  
 BLACKWELL, E. M. Carcinoma of the Anterior of Highmore 399

## Throat

- JACKSON, C. Cancer of the Larynx 395

## Mouth

- TROSTMAN, J. E. Atypical Plastic Operations for Congenital Fissures of the Lip and Palate 397  
 TRUETT, L. R. The Radiation Treatment of Carcinoma of the Mouth 398  
 SEVERSON, F. E. Carcinoma of the Tongue Treated by Embedding Glass Sponges Containing Radium Emanation 398  
 LUTHER, M. H. Some Physiological Principles in Orthodontia 399

## BIBLIOGRAPHY

## GENERAL SURGERY

## SURGICAL TECHNIQUE

Operative Surgery and Technique	39
Aseptic and Antiseptic Surgery	39
Anesthesia	39
Surgical Instruments and Apparatus	39

## SURGERY OF THE HEAD AND NECK

Head	39
Neck	393

## SURGERY OF THE CHEST

Chest Wall and Breast	393
Trachea and Lungs	393
Heart and Vascular System	393
Pharynx and Esophagus	393
Miscellaneous	393

## SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum	394
Gastro-Intestinal Tract	394
Liver Gall Bladder Pancreas and Spleen	396
Miscellaneous	396

## SURGERY OF THE EXTREMITIES

Conditions of the Bones, Joints, Muscles, Tendons, Etc.	397
Fractures and Dislocations	397
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	398
Orthopedics in General	398

## SURGERY OF THE SPINAL COLUMN AND CORD

	398
--	-----

## SURGERY OF THE NERVOUS SYSTEM

	399
--	-----

## MISCELLANEOUS

Clinical Entities—General Physiological Conditions	399
Serum, Vaccines and Ferments	399

Blood	399
Blood and Lymph Vessels	400
General Bacterial Infections	400
Surgical Diagnosis, Pathology, and Therapeutics	400
Experimental Surgery and Surgical Anatomy	400
Röntgenology and Radium Therapy	400
Hospitals—Medical Education and History	401
Legal Medicine	4

## GYNECOLOGY

Uterus	401
Adnexal and Per Uterine Conditions	40
External Genitalia	40
Miscellaneous	403

## OBSTETRICS

Pregnancy and Its Complications	40
Labor and Its Complications	40
Puerperium and Its Complications	40
New born	40
Miscellaneous	43

## GENITO-URINARY SURGERY

Adrenal, Kidney, and Ureter	403
Bladder, Urethra, and Uterus	404
Genital Organs	404
Miscellaneous	404

## SURGERY OF THE EYE AND EAR

Eye	405
Ear	405

## SURGERY OF THE NOSE THROAT AND MOUTH

Nose	405
Throat	406
Mouth	406

## EDITOR'S COMMENT

IN striving to present to the readers of the *INTERNATIONAL ABSTRACT OF SURGERY* all that is new and worth while in surgical literature, the editors are not unmindful of the fact that much that is old in surgical practice needs to be reviewed, and restated and critically analyzed. Certain writers have the happy faculty of investing old subjects with new interest, and bringing to bear on them the light of wide experience, of critical study and fresh enthusiasm.

Four subjects in widely separated fields stand out as particularly well represented in this month's contributions to the *ABSTRACT*: lung abscess, pancreatic disease, the diagnosis of bone lesions, the treatment of chronic affections of the knee joint.

THE treatment of suppurative disease of the lung is discussed in three articles, appearing originally in the *Archives of Surgery*. Herer and MacCready (p. 302) and Lockwood (p. 30) discuss the question of lung abscess, and Lemon (p. 303) that of chronic suppurative disease of the lung. The importance of conservative measures of treatment and of extreme care in the selection of cases for operation is particularly emphasized by each writer.

A CRITICAL discussion by Jones (p. 325) of fifty-six cases of acute pancreatitis, reports by Rugby (p. 326) and Norris (p. 326) of individual cases of pancreatitis due to round worms, by Krahl (p. 326) of a case of extensive cystic degeneration, and the report by Grekow (p. 327) of three cases of carcinoma, including one successfully operated upon, the patient being still alive five years later, constitute an interesting group of contributions to the clinical study of pancreatitis. In addition, Mann and Giordano (p. 324) discuss from an experimental standpoint the question of reflux of bile as an etiological factor in the production of pancreatitis. They conclude that such a mechanism rarely produces pancreatitis.

THE diagnosis of bone lesions is a subject of vital interest to every practitioner of surgery and medicine. The importance of early diagnosis has impressed itself on every surgeon who has seen, if only once a so-called case of simple fracture go on to malignant degeneration and, too often, to a fatal termination. Seven different abstracts on cystic and malignant disease of bone, including several on myeloma, appear in this month's issue. One by Bloodgood (p. 330) devoted entirely to the question of diagnosis, deserves especial attention.

CHRONIC, non-inflammatory lesions of the knee joint are so frequent, so completely disabling and so prone to recur that their treatment is of particular interest to every surgeon. Henderson (p. 336) and Corton (p. 344) present an exhaustive discussion of the subject based on a wide and extensive personal experience. McWilliams (p. 343) discusses frequent aspiration of the knee joint in traumatic synovitis and Frieberg (p. 334) the less common condition of osteochondritis dissecans with production of loose joint bodies. The report of the Commission appointed by the American Orthopedic Association for the study of tabulating operations on the foot (p. 346) is of particular interest, not only because of the findings of the committee but because it represents a step forward in the standardization of surgical practice. The purpose of the American Orthopedic Association is not in any sense, we assume, an attempt to dictate surgical methods, but rather to enable the less experienced surgeon to profit by the experience of others. It is a wise man who can profit by the mistakes of others, and it is to him that this report will appeal most strongly.

A NOTE by Howard (p. 380) on the excessive use of cathartics after operation calls attention to one of many details essential to a quiet and uneventful postoperative convalescence.

# INTERNATIONAL ABSTRACT OF SURGERY

MAY 1923

## ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

### OPERATIVE SURGERY AND TECHNIQUE

Grant, A. R. No-Hand Touch Technique. *Surg. Gynec. & Obst.* 9 3, xxxvi, 66

The technique described is as follows:

The instrument nurse threads the needle with sterile forceps, not touching the gut or the needle with her gloves.

The surgeon transfixes the tissue, pulls the needle through with needle holder and catches both strands of the suture near the needle with dissecting forceps in the left hand. He pulls on the left end with the left-hand forceps until the right short end is only  $\frac{1}{2}$  in from the point of transfixion. The long end should be proximal, and the short end distal, to the operator.

If (a) the point of the needle holder across and on top of the suture just below the tips of the dissecting forceps and makes a loop around the needle holder.

If (b) catches the short end of the suture with the needle holder, keeping its tips close to the site of the knot. While the left hand pulls the first half of the knot tight. If (c) places the tips of the needle holder beneath the suture and makes a second loop which completes the reef or square knot.

JAMES A. H. MAGOCCY, M.D.

Howard, C. A. That Baneful Cathartic after Abdominal Operations. *Canadian M. Ass. J.* 9 3, xlii, 36

In 200 cases of peritonitis treated by the author no postoperative cathartic was given. It is Howard's belief that better results are obtained by allowing the patient to remain quiet than by giving him doses of calomel a few days after operation, thereby making him restless.

The intestine, he states, will resume their normal function when normal tone returns. The administration of 30 cc of saline solution daily for three days by Murphy drip is usually all that is necessary. In some cases Howard does not give cathartic

until eight or nine days after the operation, and in others not until the patient goes home.

It has been noted that vomiting is made worse by purgation. In severe cases of peritonitis cathartic is very harmful and at times exceedingly dangerous. When the abdomen is distended, purgatives are more than useless.

The author states that before he adopted his present methods his results were scarcely as good as the average, but since then they have greatly improved.

OSWALD E. BENNETT, M.D.

Cattell, M. Studies in Experimental Traumatic Shocks: The Action of Ether on the Circulation in Traumatic Shock. *Arch. Surg.* 9 3, vi, 42.

This study was undertaken in an attempt to determine the effects of ether on the factors which influence the blood pressure, with special reference to shock or circulatory failure. The author first considered the effects of ether on the blood pressure, and then its action on the heart, the vaso-motor system, and the blood vessels.

The interpretation of blood pressure changes caused by ether is extremely difficult. According to the literature on this subject ether properly administered to normal subjects causes no fall in the blood pressure and may even cause transitory increase during the early stages of its administration. In shock, circulatory collapse frequently occurs.

Most of the author's experiments were performed on cats. In determining the effect of ether on the blood pressure of shocked animals the methods used in obtaining the records and in administering the ether were similar to those used for the normal animals. The effects on the blood pressure were strikingly different after the development of shock. In the course of work at the laboratory it was noted that higher concentrations of nitrous oxide may result in fall in blood pressure nearly as great as that due to ether. In some of the animals it was impossible to obtain complete abolition of the eye



reflex without a fall in the pressure but this fall was at any rate less than that resulting from ether.

The experimental evidence regarding the effects of ether on the heart strongly favors the assumption that in the concentrations of ordinary anesthesia, ether causes decrease in the efficiency of the heart which might account for any fall in arterial pressure occurring under ether anesthesia. With regard to the effect of ether and chloroform on the vaso-motor center, some observers report a dilatation of the blood vessels, and others a constriction.

The evidence obtained by the author supports the supposition that the drop in pressure caused in the shocked animal is due to some disturbance of the vasomotor system. The increase of the effect of ether in shock does not apply to ether injected directly into the circulation in small amounts being true only for the inhalation experiments, when general anesthesia is produced. In series of experiments on the perfusion rate of fluid through the vessels of the hind legs of the cats used by the

author during the development of shock due to muscle injury it was found that as the blood pressure fell there was gradually increasing constriction of the peripheral vessels.

The following conclusions are drawn:

1. The normal animal the inhalation of strong ether results in a sudden drop in the arterial pressure which is temporary. As the anesthesia deepens, the pressure gradually recovers until, by the time the eye reflex has disappeared, it may have returned to its original level.

2. In the shocked animal there is no recovery of the blood pressure after the primary fall, and the pressure continues to fall to zero even before the eye reflex disappears.

3. Nitrous oxide and oxygen, in the most favorable proportions, can be administered to the shocked animal without causing more than a slight drop in the blood pressure.

4. Observations on the heart volume of normal cats and on the contractions of the isolated hearts of cold blooded animals, together with deductions from blood pressure records, show that from its

very beginning, the administration of ether results in depression of the heart and decrease in its output which is sufficient to account for the fall in pressure in both the normal and the shocked animal.

5. The injection of large doses of epinephrine into anoxia in shocked animals usually results in the disappearance of the anoxic episode either for a period of an hour or longer. There is reason to believe that this is due to an antagonistic action of the ether on the heart. Pituitary extract does not influence the pressure drop caused by ether in the shocked animal.

6. Determinations of leg volume with plethysmograph, perfusion rate measurements, the results obtained by the injection of ether directly into the circulation and the form of its blood pressure curves indicate that ether causes constriction of the peripheral vessels. This constriction may be due to (1) direct stimulation of the vasomotor center and (2) a reflex to the fall in pressure resulting from depression of the heart.

7. In the blood pressure curves resulting from the administration of ether to the normal animal the primary drop is due probably to an influence on the heart, and the subsequent recovery of the blood pressure to compensatory vasoconstriction.

8. In the shocked animal no evidence of vasoconstriction caused by ether is obtained, and prompt effects from epinephrine or sensory nerve stimulation became less or entirely absent.

9. The condition of ether sensitiveness is brought about by any circumstance which tends to depress the animal's general condition such as low blood pressure, hemorrhage, severe operations, or the injection of acid into the circulation.

The cause of the greater depressing influence of ether on the blood pressure in shock appears to be disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, and the pressure continues to fall. This might be due to a depression of the vasomotor center or to an already present maximum tone of the center.

OSCAR E. BAILEY, M.D.

## SURGERY OF THE HEAD AND NECK

### HEAD

Da Fano, G. Herpetic Meningo-Encephalitis in Rabbits. *J. Path. & Bacteriol.* 925, LXVI, 25

The cerebral fluid of all types of herpes, with the possible exception of herpes zoster, contains a virus which causes death when it is injected into rabbits. Regardless of the route of transmission, the disease may be carried from animal to animal. It is not yet known whether the virus is filtrable, and its cultural characteristics are still undetermined.

One of the principal localizations of the disease is the central nervous system, here it causes an inflam-

matory lesion characterized by diffuse small cell infiltration, nerve cell degeneration, and proliferation of some of the fixed elements of the thalamus, mesencephalon, and pons. The disease has been termed "herpetic meningo-encephalitis."

While in lethargic encephalitis, nerve cell degeneration is rather local and the soft membranes are frequently unaltered, it is striking that the differences should be so greater between disease of the central nervous system in man and disease artificially produced in animals. The author found granular structures identical with the minute bodies found within and outside of the central nervous system in cases of lethargic encephalitis.

It is suggested that these granular structures may be the virus or particles of organic material to which the virus is attached. **LOYAL F. DAVIS, M.D.**

**Knoch, W.** The Picture of Hypophyseal Cachexia (Beitrag zum Bilde der hypophysären Cachexia) *Monat Arch f. intern Med.* 1922, IV, 355

The author reports a case of hypophyseal cachexia in a man 3 years old who died from pulmonary tuberculosis. Within a period of 1 year the patient failed visibly, showing loss of energy, marked emaciation, loss of hair, increasing apathy and mental clouding. Because of the pulmonary disease the diagnosis of hypophyseal cachexia was not made.

A autopsy revealed, in addition to the pulmonary tuberculosis, tuberculosis of the anterior lobe of the hypophysis (adenohypophysis). The posterior lobe was entirely normal. In the anterior lobe there were few endodermal cells, but a considerable number of eosinophilic cells.

Etiological factors of hypophyseal cachexia include puerperal sepsis, tuberculosis and syphilitic processes. Summowski believes that septic embolism of the artery supplying the anterior lobe is the cause in women with a febrile puerperium and this results in complete atrophy and fibrous transformation. Gammal and tuberculosis may also cause the disappearance of the anterior lobe (the cases of Faber and Reye). In partial atrophy the signs of loss of the gland are absent, the condition being recognized only as a secondary finding at autopsy.

The chief symptoms of the condition are premature senility, loss of hair, a decrease in the function of the sexual glands, and psych changes in a period of life in which such changes do not usually occur.

In the treatment the etiology (syphilis) must be considered in addition the administration of fresh hypophyseal substance is indicated.

The author regards hypophyseal cachexia as disease of actual maturity caused by the loss of function of the anterior lobe of the hypophysis which reacts upon the mature sex glands. He calls attention to the change in the fine structure of the anterior lobe during pregnancy and ascribes the very destructive effect of the septic embolism of this anterior lobe in Summowski's cases to the fact that it affected the organ in the process of involution. He calls attention to the known phenomenon of loss of hair in women few weeks after confinement which he attributes to the marked physiological activity of the hypophysis at the time of pregnancy. **ROMANOWSKI (2)**

**Thompson, J. F.** Atypical Plastic Operations for Congenital Fissures of the Lip and Palate. *Surg. Cl. N. Am.* 1927, 387

The author describes the causes of typical plastic operations for congenital fissures of the lip and palate.

In repairing a complete fissure of the lip extending into the nostril the curvature of the deformed nostril must be restored so that it will resemble the sound

ones in every detail, the lip must be made long enough, and the vermillion border must be restored.

In the first case that of a 6-year old boy there was a congenital fissure of the lip and palate in which the lip had been operated upon unsuccessfully with consequent complete destruction of the philtrum. On the left side the fissure of the lip was complete into the nostril the alveolar border was cleft and the fissure extended backward through the hard and soft palates. On the right side the margin of the nostril was intact, but the rest of the lip was fissured. The anterior margin of the alveolar border was grooved at the junction of the maxilla and premaxilla. The original skin (philtrum) covering the anterior surface of the premaxilla had been destroyed and replaced by a thin layer of epithelium of low vitality resting on a base of dense scar tissue. In several areas the surface was ulcerated. There were no erupted teeth in the premaxilla and the X-ray showed the presence of only two tooth germs, which doubtless represented the permanent central incisors. The temporary teeth had probably been extracted during previous operations.

On the palatal surface the union of the maxilla and premaxilla was complete. The septum was attached to the right edge of the palatal fissure. The premaxilla was separated from the front of the left maxilla by an interval of about 3 mm. The palatal plates on both sides were very precatious. The free edge of the left palatal plate was fully 3 mm higher than that on the right side which was attached to the septum. The palatal fissure was not more than 3 mm wide at its widest. The mucous membrane covering the palatal plates was entirely normal. No operation had been performed on the palate.

The following sequence of operations was decided upon: (1) repair of the palate and replacement of the premaxilla; (2) repair of the lip and nostrils.

**Repair of the palate.** Langenbeck side incisions were made and the palate was repaired from end to end in the usual manner without difficulty. Sixteen sutures of silk worm gut were used in both the hard and the soft palate. A wedge-shaped portion of the septum was removed and the premaxilla pushed back into place. It was not sutured to the left side of the maxilla but was held in place by strips of adhesive plaster passed over its anterior surface and fastened to the cheeks. The palate healed from end to end by first intention. Unfortunately the adhesive plaster irritated and destroyed the skin covering the premaxilla therefore it was removed in thirty hours. In consequence, the premaxilla did not stay in contact with the left maxilla, but projected forward again.

Three months later the premaxilla was again molded into place. After denudation of the opposed sides of the premaxilla and the left maxilla a silver wire suture was passed through the front of the left maxilla and around the premaxilla, and the two bones were brought into contact. After three weeks the wire was removed. Firm union resulted.

*Repair of the lip* The philtrum had been completely destroyed during the previous operations, and the epithelial covering of the premaxilla was of such low vitality that it was useless for any purpose. The left nostril flared wide open and the ala nasi was separated from the columella for a considerable distance. The right nostril was completed by a ring of normal tissue. Below this, the right margin of the cleft flared outward at a sharp angle. The margins of the cleft were separated from one another by a distance of 32 mm. just below the ala nasi, and by a distance of 35 mm. at the free edge of the lip. It was intended to make a transverse incision into the cheek on each side just below the nostrils and bring the two flaps toward the middle line so that when they were united by their mesial edges they would cover the premaxilla and form a new philtrum. Each of the lateral incisions was carried out and to point just below the outer angle of the orbit. A vertical cut was made upward behind each ala nasi to liberate it and allow it to be carried upward in a curve toward the posterior end of the columella to which it was subsequently attached. At the posterior end of each transverse incision a triangular area of cheek was finally excised to smooth out the fold or pucker that resulted when the flaps were put under tension and their anterior ends were united. The free inner margin of the flaps were pared exactly as is done in an ordinary barelip operation and then sutured.

The result was very satisfactory from the operative standpoint. Good firm union occurred from end to end. From a cosmetic standpoint the result was not so pleasing. The nostrils were fairly satisfactory but the lip was probably too long (deep) although it is a little early to speak finally on this point. As time passes the nose will straighten itself out, the nostrils will become less prominent, and the lip will become narrower. The most serious disappointment is the mouth. The angles of the new mouth are drawn very close together and the lower lip has been thrown into an ugly prominent curve with everted mucous membrane.

The second case, that of a 5 year old girl, was case of complete unilateral congenital fissure of the lip and palate on the left side which had been operated upon several times. The lip and nostril showed serious defects. The palate had suffered severely showing complete loss of the central part of the velum on each side and irregular union of the mucoperiosteum in front.

The general contour of the lip was not displeasing. It was of the proper length (depth) but there was no notch on its free margin. The mucocutaneous line as defective, showing distinct break. The left nostril was considerably out of place. Its aperture lay on plane posterior to its fellow. The ala nasi was displaced outward and backward, and flared so as to expose on the surface a demilune of mucous membrane which, under normal circumstances, would have been lying on the floor of the nasal passage. Just below this demilune was a deep

pucker or crypt. The mushroom shaped curve of the under-surface of the nose was quite flattened on the left side.

The alveolar border showed a very narrow fissure between the left central incisor and the canine. No evidence of the left lateral incisor could be found. It may have been removed at one of the previous operations. The palate immediately behind the alveolar process was intact for a short distance. Then came an irregular fissure, 10 mm long and finally a line of union which reached to the level of the posterior margin of the hard palate. From this point the middle of the velum was missing. The lateral parts of the velum were prolonged backward, diverging widely into the palatoglossus and palatopharyngeal muscles, between which on each side lay the tonsil. The tonsils were unusually large.

The following sequence of operations, as decided upon: (1) removal of the tonsils (2) plastic repair of the lip and nostril, (3) reconstruction of a new soft palate from the palatoglossus and palatopharyngeal and the pharyngeal wall (4) closure of the fissure in the hard palate.

Up to the present date the first three steps have been completed satisfactorily.

*Removal of the tonsils* The tonsils were dissected out May 18, 1909 with extreme care to preserve both palatal muscles intact.

*Plastic reconstruction of the lip and nose* This was done June 6, 1909. An incision was carried from the top of the nose backward along the under surface of the middle of the columella to its junction with the philtrum, thence outward, below and parallel to the margin of the nostril, across the scar of the repaired lip underneath the ala nasi in a curve, and finally downward in a curve until it reached the red line of the lip at a point previously fixed. The puckered scar tissue and depressions were removed. The dissection was carried between the alar cartilages until the lower edge of the cartilaginous septum was reached. The cross medials of each cartilage

was separated thoroughly from the side of the septum behind and from its fellow cartilage in front. The alar cartilage on the affected side was now made to slide forward on its fellow carrying with it the displaced nostril. By this maneuver the margin of the incision on the affected side slipped forward on the other margin which remained fixed. The edges were then sutured in their new position. It was necessary to carry the median incision in the columella farther forward over the tip of the nose in order to separate the alar cartilages far enough to let the left cartilage slide forward. This brought the scar into view. At first it was rather objectionable, but in a few weeks as scarcely noticeable.

*Reconstruction of new velum from the palatoglossus and pharyngeal and the pharyngeal wall* This operation was performed July 5, 1909. After the removal of the tonsils the deep surfaces of the palatoglossus and palatopharyngeal had fused together except at their extreme posterior ends. There seemed to be very little muscular tissue in them. They always

appeared to be nearer together before anesthesia than during deep narcosis. Probably the gag had something to do with this.

The palatoplasmy was cut as near the tongue as possible and the incision carried upward and outward into the cheek through the mucous membrane lining the angle between the posterior ends of the maxilla and mandible. The palatopharyngeus was then cut where it fused with the pharynx and the incision carried through the pharyngeal mucous membrane as high as the eustachian tube. In this manner a somewhat curved triangular flap was thrown upward and inward. The base of the flap abutted on the posterior end of the maxillary alveolar margin and its blood supply was derived from the descending palatine artery. Short Langenbeck side incisions were then made along the inner margin of the alveolar processes on each side and the remnant of the velum palati lifted up from its bed until it was free from all tension. Finally the mesial edges of the flaps were pared and sutures were passed. Following the author's usual custom, vertical mattress stitches of silk-worm-gut were made Union by first intention followed. The reconstructed palate was firm and strong, although somewhat short and stubby.

At the time this article was written the fissure in the anterior part of the palate had not been repaired. This operation will be postponed for several months to allow the posterior part of the palate to become thoroughly vascularized.

O. M. RORT, M.D.

McWilliams, C. A. and Dunning, H. S. Rhinoplasty and Cheek, Chin, and Lip Plastics with Tubed Temporal Pedicled Forehead Flaps. *Surg. Gynec. & Obst.* 9: 5, 1909.

The authors are of the opinion that transplanted cartilage usually remains permanently in position

and is seldom absorbed even though X-ray examination does not reveal its presence. For the insertion they prefer a transverse incision (Fig. 1 A) as it does not leave a noticeable scar and is not apt to become infected. This is adapted to cases in which it is not necessary to provide support for the columella.

The Indian and Italian methods have many faults. The Indian method leaves an unsightly scar in the center and most prominent part of the forehead. By the Italian method skin from the arm is transplanted with difficulty. Moreover, this skin is not the same color or texture as that of the face.

For most plastics on the cheeks, chin, and nose the temporal pedicled forehead flap, taken from behind the hair line, is the most suitable and gives the best results. The objection that the transplanted flap grows hair is not important for the hair can be permanently removed by the X-ray in short time. A flap is obtained from the side of the forehead its base containing the superficial temporal artery. The inner surface, including the pericranium, is undermined. A Thiersch graft is applied to the under side before the transplantation is done. If cartilaginous support is needed, it is procured from the costosternal junction and inserted between the skin and pericranium of the graft, the flap being then left in place two weeks before it is transplanted. The blood supply is adequate, and the flap remains soft and pliable on account of the Thiersch grafts on its under surface (Figs. 2 and 3). After three weeks the flap is freed and replaced on the forehead. The edges of the wound are freshened and sutured with interrupted sutures of silk-worm-gut. At the same time any remaining defect in the forehead is covered with Thiersch grafts.

In the authors' opinion the results of finger transplantation to correct nasal defects are unsatisfactory.

WILLIAM J. PROBERT, M.D.



Fig. 1

Fig. 2

Fig. 3

Fig. 1. Incisions (Shrehan) used for insertion of cartilage into middle nose. A, infraglabellar incision preferred by the authors. B, upper cuticular incision. C, skin incision for insertion of cartilage laterally. D, horizontal ear incision, not incision of cheek because of danger of infection.

Fig. 2. Tubed pedicle forehead flap taken, when the hair line of the right temporal region and reflected into the nose.

Fig. 3. Side view of final result.

Tammig, L. R. The Radium Treatment of Carcinoma of the Mouth. *Med Clin N Am* 9 4 333

A large percentage of the cases referred for radium treatment at the present time are the hopeless ones which have been treated unsuccessfully by surgery or in which the seeking of expert advice has been deferred until the possibility of cure has passed. I speak of this the number of satisfactory results has been encouraging and soon it will be possible to recognize the claim of cases for radiotherapy given alone or in combination with surgery.

The author reports three cases illustrating the types of mouth malignancy suitable for radium treatment.

One case is that of a man 40 years of age who first noticed a ulcer on the right side of his tongue about four months prior to the initial examination. The lesion was a fissure like ulceration in a hard nodular mass extending from just in front of the anterior pillar to within about 4 cm of the tip of the tongue. The palpable induration projected well over the midline. Loosened by the Wertheim test. The lesion was too extensive for surgery or the diathermy cautery. The treatment of choice in this case was unscreened but of radium emanation.

The tubes are inserted in the malignant tissue rather than in the normal tissue surrounding the malignant area. The true reaction which consists of a burning pain in the tongue and swelling usually begins about one week later. The period of intensity of the reaction is variable. If rest is not given it is advisable to remove them surgically if possible. If the condition is not operable but the best of the emanation should be inserted.

In the second case the author found a tumor on the inner surface of the left cheek of an elderly worker about one year ago. The lesion was a hard, about 6 cm in diameter and about 4 cm high. The glands were not palpable. Five bare tubes, totalling 0.5 mc, were inserted into the mass. On account of the suspicious appearance of the tongue mixed treatment is given for some time under the impression that the carcinoma might be developed on the buccal mucosa. Within a month the reaction subsided and the mass had entirely receded. Two months after treatment hemorrhage occurred. Five months later an area of increasing thickening was noticed. Additional treatment of four bare tubes was then given. Five months ago a hard nodule developed at the tip of the tongue. Five bare tubes totalling 1 mc, were inserted into the mass. The tongue is still tender but there is no evidence of recurrence at the present time. The author feels that this case has responded well to radiotherapy.

The last case was a nodular ulcerative hard lesion of the posterior edge of the soft palate involving the left side of the uvula. A course of tuberculin therapy given a spot of negative blood Wassermann had no effect upon the growth. Four bare

tubes were then inserted in the tumor. One month later one bare tube was inserted in the suspicious area on the left side of the uvula. Only one week has elapsed since the last treatment but the entire area feels soft. The cervical region was given a course of X-ray treatment soon after the first bare tube treatment. J. W. C. B. A. W. M. D.

Simpson, F. J. Carcinoma of the Tongue Treated by Embedding of Glass Ampoules Containing Radium Emanation. *Chicago Med Rec* 9 3 27 479

The embedding of glass ampoules containing radium emanation is superior to the usual methods of applying radium and better than surgery because (1) the soft beta rays are effective (2) under a visible current of cancer cells may be destroyed (3) the effect of the radiation is to some extent selective (4) the cancer cells are damaged more than the normal tissue cells (5) the effect of the radiation extends at least 1 cm beyond the tip of the ampoule (6) the dosage is exact and (7) traumatism is minimal.

After local anesthesia is obtained the glass ampoules are boiled and inserted into the sharp end of a sterile needle back about a plunger to the other end. Before the ampoule is ejected by the plunger the needle is withdrawn a few millimeters in order to prevent breaking the ampoule by forcing it against the tissue.

Usually from five to fifteen ampoules are inserted into the tumor tissue. Each contains one mc. The ampoules are placed about one apart and allowed to remain permanently or until they slough out in the course of healing.

The radioactivity of the ampoules is lost in about fourteen days. Healing occurs in from four to eight weeks and usually leaves a smooth cicatrix.

W. A. FARRAR, M. D.

## NECK

Glogau, O. Abscesses Descending from the Upper Air Passage. *Arch N S & Med Res* 9 3 21 39

Glogau has worked out an operative procedure for abscesses descending into the deep tissues of the neck from the region of the pharynx, the tonsils, the base of tongue or other nearby structures. At the same time the neck is the same. However the origin of the condition the method is applicable to every case. A skin incision is made over the anterior margin of the sternocleidomastoid muscle from the level of the posterior angle of the jaw to the jugular fossa. By blunt dissection the superficial tissues are pushed back and the anterior margin of the cervical sheath is retracted. The omohyoid cut and the anterior mediastinum exposed. A tampon of gauze is inserted to press out the purulent material from entering the mediastinum. If the anterior mediastinum has already become infected it is drained. By lifting the thyroid forward the pos-

terior mediastinum and the peri-esophageal tissues are exposed. Another tampon is inserted in this region. The abscess is located by sharp and blunt dissection begun at the upper angle of the wound and continued into the depths, and is then opened and drained.

In the after treatment the mediastinal tampons are removed about the fourth day and the drains into the abscess are removed according to the indications. A careful pharyngeal examination is great aid in the final stage of the operation.

The author reports three cases in which he used this method with complete success.

RALPH B. BETTER, M.D.

Labey, F. H.: Tuberculous Glands of the Neck and Spinal Accessory Paralysis. *Surg. Clin. N. Am.* 9: 4, 1909.

Tuberculous infection of the cervical glands is usually located in front of or beneath the sternomastoid muscle, opposite the angle of the jaw, and is common on both sides of the neck. Palpation is important in the differentiation of simple inflammatory glands, tuberculous glands, Hodgkin disease, and malignancy. Tuberculous glands may be discrete or fused, depending upon the amount of caseation and secondary infection present. They persist for months without evidences of cutaneous inflammation. Tenderness occurs after caseation with secondary liquefaction and infection. Tuberculosis may be associated with Hodgkin disease. As a rule, fever appears only after secondary infection. The author has never observed the simultaneous occurrence of cervical, axillary and inguinal tuberculous dermatitis. When cutaneous lesions can be eliminated the presence of a chronic sinus suggests tuberculous.

The treatment consists in:

Removal of all possible septic foci draining into this region, such as teeth, tonsils, and adenoids. The tonsils are frequently the portal of entry of the tubercle bacilli. Septic foci saturate the glands with toxic substances which lower the resistance to infection by the tubercle bacillus.

Supervision and control of the patient's living conditions.

1. X-ray treatment of the glands before operation or after foci and abscesses have been drained.

4. Tuberculin therapy.

5. Incision and drainage of broken-down glands with secondary infection. Large incisions are not necessary.

6. Radical excision of the glands in certain extensive and persistent cases in cases of discrete and localized glands which are easily removed without extensive dissection and failed to disappear when other measures were used and in cases in which the disease continues to spread in spite of conservative treatment.

Division or injury of the spinal accessory nerve in simple incision or radical excision may cause trapezius paralysis. The author has previously re-

ported twelve such cases. In some cases the nerve was carefully preserved but persistent paralysis resulted. Spinal accessory paralysis causes lengthening and sagging of the shoulder. The scapula falls away from the midline. The upper angle of the scapula is prominent on account of its support by the rhomboid muscles and on account of the sagging of the outer angle due to the weight of the arm. The arm can be abducted slightly less than 90 degrees. In cases in which the third and fourth cervical and the spinal accessory nerves anastomose to supply the trapezius muscle the trapezius may function through the cervical plexus after injury of the spinal accessory nerve. In extensive dissections, especially about the internal jugulars, the third and fourth cervical nerves may also be injured.

WALTER C. BURKET, M.D.

Hertzler, A. E.: The Technique of Thyrotomy. *Ann. Otol. Rhinol. & Laryngol.* 9: 333, 3.

The author describes the following technique of external operation for the removal of intrinsic tumors of the larynx:

For a distance of 2½ in. with its mid point over the height of the Adams apple, the skin is infiltrated with a local anesthetic. From this line the subdermal tissues down to the surface of the cartilage are injected and the superior laryngeal nerves are blocked. The laryngeal mucosa is then anesthetized by passing the needle obliquely through the cricothyroid membrane and through the thyroid cartilage, the solution being introduced between these structures and the mucosa.

A vertical incision is made along the line of primary infiltration, and the vessels are clamped and ligated. The thyroid cartilage and the cricothyroid membrane are exposed. These structures are split exactly in the midline dividing the cartilage and the mucous membrane. The edges are retracted and the vocal cords located. After the mucosa is cut the two parts of the thyroid cartilage are carefully retracted with small retractors. The entire interior of the larynx is then exposed to view and the necessary operation is done. After the operation, the retractors are removed, the cut edges of the thyroid cartilage being allowed to resume their natural position. The fascia over the cartilage is united with interrupted catgut sutures. The wound is closed with a homeobar.

ARTHUR L. SKEFFLER, M.D.

Jackson, G.: Cancer of the Larynx. *Ann. Surg.* 9: 3, 1899.

The author states that cancer rarely if ever develops in previously entirely normal larynx.

For all clinical purposes the term precancerous condition may be defined as any histologically abnormal condition intervening between the normal and the cancerous.

Vocal abuse should be considered a factor in cancer of the larynx. Persistent vocal abuse is one of the most common causes of chronic laryngitis.

keratoses, papillomata, and granulomata. When perpetuated by local abuse and other causes, these conditions may favor the development of cancer.

Eversion of the ventricle should be placed as the precancerous class of conditions. In one case the author was able to make a definite diagnosis of cancer on the same side as the eversion ten years after the eversion was first discovered.

Twelve of the author's cases of cancer of the larynx a foetic lesion preceded the cancerous lesion.

Diseased tonsils should be considered a cause of cancer of the larynx as focal infection in the tonsil may be the chief etiological factor in chronic laryngitis and chronic laryngitis may be a precancerous condition. The author is convinced that the chief factor in the etiology of laryngeal papillomata, granulomata, and hematomata is some form of irritation, including that due to trauma and chronic inflammation.

The vocal cords are the parts of the larynx subjected to the most irritation. The author has seen five cases in which an isolated cancerous lesion developed on one cord at a point exactly opposite an isolated cancerous lesion on the other cord. During phonation, the lesions touched. In neither case was there an continuity between the lesion.

In the treatment of precancerous laryngeal conditions absolute rest of the larynx is essential. It is difficult to obtain such rest as the dusty atmosphere in most dwellings is injurious.

Laryngectomy is so mutilating that it is unwise to use it in the treatment of a chronically inflamed larynx merely suspected to be cancerous.

Keatings and similar overgrowths of epithelium occurring in adults are to be dealt with as potentially precancerous conditions.

JAMES C. REASWELL, M.D.

Glondino, A. S. and Gayler H. D.: Histologic Study of the Effect of Ligation of the Thyroid Vessels in Experimental Goiter. *Surg. Gynec. & Obst.* 92, 221, 75.

Following ligation of the thyroid arteries there is a marked drop in the basal metabolic rate in cases of hyperplastic goiter. In a series of forty-two ligations there was an average drop of from +60 per cent to +30 per cent ten days after the operation.

A histologic study of the thyroid gland was made to determine the anatomic changes following ligation and to correlate them with the clinical course of the case. The vessels of the glands studied had been ligated for from five to three hundred and thirty days before thyroidectomy. The portion of the gland away from the ligated pole served as control. Sections were taken from the gland near the ligated pole and compared with sections from the unligated portion. The size of the follicles, the type of epithelium lining them, and the amount of colloid present were particularly noted.

The most constant finding of the early period in the sections taken near the ligated area



Fig. 1. Large follicles lined with cuboidal epithelium and sprouting processes projecting into the lumen of follicles, five days after ligation.



Fig. 2. High columnar epithelium lining the follicles and being adapted pole. Compare with Fig. 1.

tendency of the lumina of the follicles to be large and filled with colloid. The portions of the gland for the entrance of the ligated vessels were surgically free from these changes and apparently more active, as shown by the marked parenchymatous hypertrophy (Figs. 2 and 3).

The frequency of the involution forms is shown in the table.

Definite involution changes were found in thirty-five of fifty cases (70 per cent). No relationship between the time of ligation and the time of partial thyroidectomy was demonstrable. In the clinical course of the condition it was found that definite

Type of lesion	Evolution classes			
	Cases	Marked	Slight	Indefinite
U. p. c.	3	24		5
U. p. c.		24		
Tracheitis				
Quadrilateral				

clinical improvement and lowering of the basal metabolic rate occurred more frequently when definite involution changes were demonstrable in the ligated poles.

**Tarnanecanu's Goetach's Test and Radiotherapy in Diseases of the Thyroid** (Epreu de Goetach et radiotherapie dans les affections du corps thyroïde) *J de med et de chir* 9 72 3

Although amelioration of the symptoms in exophthalmic goiter is proof of the efficacy of radiotherapy, the radiologist has no guide in regard to the time at which each treatment should be stopped. To obtain such a guide the author tried the Goetach test for hyperthyroidism, described first in 1908 via the subcutaneous injection of 5 c.c. of distilled water. The only modification made by Tarnanecanu was the use of 1 c.c. of solution instead of 5 c.c. This test he has applied to all patients who have come to him for roentgen treatment for disease of the thyroid. Cases are classified as follows:

Cases of true exophthalmic goiter with positive Goetach test prior to treatment, which were so benefited by radiotherapy that after the treatment the Goetach test was negative or only feebly positive.

Cases in which, after improvement following radiotherapy, there was a relapse, the Goetach test again becoming positive.

3. Cases undergoing treatment by radiotherapy in which the Goetach test was negative.

4. Cases not having radiotherapy and with negative Goetach test.

From his findings in these cases the author comes to the following conclusions:

By the objective and functional disturbances which it provokes the Goetach test gives information regarding hyperfunction or dysfunction of the thyroid gland.

It allows the radiologist to make a selection of patients with diseases of the thyroid and to separate those amenable to radiotherapy from those who should be treated by other methods.

3. The Goetach test is a rational biological test which indicates to the radiologist when the treatment should be stopped.

4. After the completion of radiotherapy the test makes it possible to keep the patient under observation as it must be periodically repeated. It will reveal even the slightest tendency to relapse so that treatment may be renewed before the symptoms become fully apparent. R. A. BARNES.

White P. A. Surgery of the Thyroid Gland *J Tex State M Soc* 9 3 322

Surgery, X-ray and radium, in conjunction with rest and palliative medication are the only measure in goiter treatment which have survived the test of time.

Plummer divides goiters into three types: colloidadenomatous, and exophthalmic goiter.

Colloid goiters require surgical treatment should not receive X-ray or radium treatment. They may be prevented by giving iodine and three-fourths of them can be reduced by the administration of iodine or thyroid products. They are symmetrically enlarged, feel soft and granular and microscopically show dilated acini filled with colloid material and lined with flattened epithelium. The basal metabolism is normal. This type of goiter probably never occurs in persons over 35 years of age but is common during adolescence especially in girls, often appearing at the following puberty and usually disappearing before the age of 15.

The adenomatous goiter is a surgical condition but should not be operated upon before the patient's growth is completed because it seldom becomes toxic during adolescence the thyroid gland is greatly needed at this period, and immature adenomata may be left to develop later. After growth is completed the adenomata may be removed, whether they are toxic or not, because of the danger that they may become toxic. They occur most commonly in middle life, but may appear during adolescence becoming prominent only when the colloid material subsides. Adenomata are irregular and nodular; their consistency depends on the degenerative process present. Those of the fibrous and calcareous types are hard, while those of the colloid, cystic and hemorrhagic types are soft. Microscopic examination shows the adenomata to be encapsulated by normal thyroid tissue. The acini of the adenomata may be fetal or adult in type and may contain large quantities of colloid material. Toxic adenomata show no hypertrophy or hyperplasia of the acinar epithelium. Toxicity is due to degenerative products. The average age at which toxic symptoms appear is 43 years. At first the toxicity is mild but it gradually increases. It exerts selection on the heart and blood vessels, causing such symptoms as an irregular pulse, attacks of tachycardia, hypertension, and later myocardial degeneration, dyspnea and edema. Tremor, moist and flushed skin, and loss of weight and strength are noted. The metabolic rate is increased, but does not reach the height of that in exophthalmic goiter. Exophthalmos is absent. There does not seem to be any rational basis for X-ray or radium treatment. After operation the metabolic rate usually becomes normal.

Exophthalmic goiter may occur at any period of life. It has been found in children under 10 years of age and in persons nearly 60 years old. The symptoms are tachycardia, flushed moist skin, tremor and loss of weight and strength, which appear early



and progress rapidly. Exophthalmos develops in the first few months in 50 per cent of the cases and during the first 5 years in 90 per cent. The pulse is rapid but regular until myocardial degeneration occurs late in the disease. There are remissions and exacerbations of the condition. The gland is symmetrically enlarged, feels quite hard and macroscopic examination shows that the actual epithelium is hypertrophied but that very little colloid is present.

The rapid, often explosive development of exophthalmic goiter carries menace to life and entails rapid degenerative changes in vital organs. The natural course of the disease and each exacerbation hastens dissolution or chronic invalidism. If there is doubt as to the patient's tolerance of thyroidectomy a preliminary superior polar ligation will give a test. If the patient cannot withstand thyroidectomy a second ligation will modify the crisis so that operation may be performed three or four months later. In thyroidectomy for exophthalmic goiter all but the posterior capsule of one lobe, the isthmus, and part of the other lobe should be removed. One fifth of a normal lobe will maintain thyroid function. Myxedema following thyroidectomy is rare condition. After surgical treatment of exophthalmic goiter including ligs and severe cases, over 64 per cent of the patients are free from all evidence of hyperthyroidism, and 83 per cent are markedly improved, making approximately 80 per cent of excellent results after 34 years.

Those who use the X-ray and radium are in many cases making premature and extra agent of use for the treatment of exophthalmic goiter but some of the work merits consideration. However it is not known that large enough number of patients will escape subsequent exacerbations and consequent visceral damage to offset the known defect in this method of treatment.

Goetz gives the X-ray place in the treatment of mild cases and in the preparation of severe cases for surgery, but warns that it may cause the loss of valuable time with great increase in the surgical risk. Jones states that the benefit of X-ray treatment should be estimated and controlled by basal metabolism tests. Holmes points out the dangers of myxedema from too long or prolonged X-ray dose.

Equally good result should be obtained by radium as with the roentgen ray.

WALTER C. B. M.D.

Martin, E. V. The Blood Supply of the Thyroid Gland and Its Surgical Significance. *Surg. Gynec. & Obst.* 9:13, 1937. 40.

A detailed study of the blood supply of the thyroid gland is made by injecting autopsy specimens with bismuth carmine gelatin mixture. Injections into the superior or inferior artery on one side invariably forced the mixture out of the corresponding vessel on the same side. In number of

instances the injected material also appeared in the vessels of the opposite side.

The principal arterial trunks ramify on the surface of the gland within the true capsule and anastomose freely with one another. The superior thyroid artery is very constant in division and distribution generally dividing into three branches. The inferior thyroid artery divides into two or more branches at varying distances from the gland.

As a rule the arteries in the substance of the gland are accompanied by veins, which join at various points. These veins follow the course of the arteries closely and at different points empty into the larger veins that emerge from the interior of the gland and anastomose freely on the surface.

The individual vessels are larger in cases of colloid goiter than in cases of exophthalmic goiter. Because of the vascularity of most exophthalmic goiters this observation appears to be paradoxical, but is explained by the multiplicity of small vessels found in hyperplastic thyroids.

Hemorrhage after operation, which is now so common, generally occurs from a few hours to seventy-two hours later and usually from an anterior thyroid vein or branch of the inferior thyroid artery. Hemorrhage after the third day is extremely rare and always the result of infection.

The following conclusions are drawn:

1. The thyroid has a very rich arterial and venous blood supply.

2. There is an extensive anastomosis not only between vessels of the same lobes, but also between those of opposite lobes.

3. If all four thyroid vessels are ligated, the circulation may be reestablished through extraglandular anastomoses.

4. The secretory activity of the thyroid gland is under nerve control.

5. After ligation of the superior thyroid artery a posterior ligation should be made in order to cut off the veins and lymphatics and the remaining nerve filaments.

6. Hemorrhage is best controlled by interrupted mattress sutures placed through the remaining gland tissue by ligation of all bleeding points, and by the use of gauze packing in the wound if necessary.

7. Bleeding veins can often be demonstrated by ligating the patient's arm or thigh before the wound is closed.

Sackl, F. Tetany After Hemistruvectomy (Tetanus nach Hemistruvectomy). *Mitt. A. B.* 9:1, 1937. 43.

A case is reported in which in 910 hemistruvectomy on the right side as done. Recently the remaining left half of the goiter is believed to have become somewhat larger. In the past few weeks the patient has frequently noticed tingling in the hands. February 9 there was an attack of tetanic convulsions positive Chvotsek I and II.

which lasted for twenty-five minutes. On further examination the Trousseau phenomenon was strongly positive after one minute and the electrical excitability (Erb's phenomenon) was found moderately increased. CaCC occurred with a current of 5 ma AnOC with 5 ma AnCC with 5 ma and CaOC with 4 ma (ulnar nerve).

Calcium therapy as extremely effective. Hecalan (1 and 30 per cent) was given every second day in doses of 1 ccm. The attacks ceased after the first week of treatment but occasionally there

was slight paresthesia in the hands. In the fourth week the galvanic hyperexcitability reached the following values: CaCC with 1.0 ma, AnCC with 5 ma, AnOC with 4 ma and CaOC with 6.0 ma. The Chvostek phenomenon was obtainable only during the attacks.

This case shows that the possibility of a predisposition to tetany must be taken into consideration even after an apparently successful hemistruemectomy and that attacks of tetany may occur even after a period of years. FROEMER (2).

## SURGERY OF THE CHEST

### CHEST WALL AND BREAST

Whittetmore, W. T. Unusual Cases of Empyema. *Surg. Clin. N. Am.* 1922, 17, 995.

The author presents two cases of double unilateral empyema cavities. In the first case there was an encapsulated empyema cavity in the apex, and another at the base of the right lung. Pus from one cavity contained pneumococci, while that from the other showed streptococci. In the second case the fluoroscopic examination revealed two areas of encapsulated fluid with gas above the fluid level. At operation these cavities were found to be connected by a sinus. The patient developed a staphylococcus septicemia but recovered.

RALPH B. BETTMAN, M.D.

Hedblom, C. A. Recent Progress in the Treatment of Chronic Empyema. *J. Tex. State M. Soc.* 9, 3, 1920.

According to the author, dealing with the conditions which predispose to or maintain chronicity and the adaptation of the antiseptic solution irrigation to its treatment, constitute the essentials of real progress in the treatment of chronic empyema. The most common causes of chronicity are faulty drainage, dense adhesions due to delayed diagnosis, tuberculous infection, bronchial fistula, foreign bodies (for example lost drainage material) and certain constitutional conditions apparently associated with inability to cope with the infection. Actinomycosis, pulmonary fibrosis occurring during the collapsed state of the lung, and empyema following complete collapse are rare causes.

In some cases cure is now effected without operation, and in many with only minor operation. When radical measures are necessary preliminary complete sterilization of the field preventing post-operative infection can be accomplished by irrigation with Dakin or hypochlorite solution. For the best results, the content of free chlorine the active principle in Dakin's solution, should be between .45 and .5 per cent.

The author describes the simple technique employed at the Mayo Clinic, which usually results in reducing the empyema cavity to a capacity of 50 to 100 cc. If the residual cavity has a capac-

ity of more than 100 cc. decortication should be performed, but in cases of long standing and in those in which the cavity is shallow permitting only slight expansion of the lung, rib resection should be performed and followed by further irrigation. If the cavity has a capacity of less than 100 cc. rib resection is performed, and the parietal pleura is excised if it is very thick and rigid.

Another successful method, used by Keller consists in preliminary rib resection and irrigation of the cavity with hypochlorite solution until seven successive sterile cultures are obtained from smears from the depths of the cavity; the soft tissues then being mobilized and sutured in layers.

When large bronchial fistula is present, open drainage is usually indicated instead of the use of hypochlorite solution by the closed method. The treatment varies according to the type of case.

Jepson, W. T. Mors of the Breast. *J. I. State M. Soc.* 9, 3, 1920, 4.

The United States mortality statistics for 1920 show 72,93 deaths from cancer of which 6,437 (8.8 per cent) were due to breast carcinoma. Ninety-three are due to cancer of the male breast. Of Halsted's cases operated on for breast carcinoma, eighty-nine (42.4 per cent) were cured. Walthers' statistics from the Paris hospitals give 52 per cent of cures after three years, and Le Dentu's statistics give 47.5 per cent of cures after four years. Of Halsted's 210 cases, 5.4 per cent had involvement of the axillary lymph nodes and 7.4 per cent involvement of both the axillary and cervical lymph nodes.

Women come late for treatment because of lack of familiarity with the symptoms. The senescent woman may know of tumor in her breast and suspect its character but shrink from operative interference through fear that it will be of no avail because she has known of one or more of the 50 per cent of patients not saved by the operation. Every failure to cure by operation prevents one or more from seeking timely aid. Some women are deterred from seeking operation through fear of the magnitude of the operation or misconception of the function and importance of the breasts.

In the author's opinion the senescent woman a breast should be regarded as a useless area of integument harboring all the dangers of malignancy and its removal implies no loss of function or an danger greater than that associated with the excision of similar area of integument elsewhere. Therefore in a case of tumor of the breast removal of the breast should not be delayed until a positive diagnosis of malignancy can be made.

The classification of breast tumor is based on the histopathology and necessitates examination of the tumor itself. This classification may not be differentiated by physical and clinical record alone. However a tentative pre-operative diagnosis must be made from the physical characteristics, the clinical history and the patient's age. A rule the last in the list of conditions breast hypertrophy and benign tumors, such as fibroma, desmoma and fibroadenoma may be differentiated on this basis. Occasional mistakes are made. Benign growths usually appear in the premenstrual age and are encapsulated, freely movable, generally painless and slow growing.

Papillary and cystic fibroadenoma or cystadenoma is more confusing because it usually develops after the menopause and malignant forms are relatively frequent. It is simple globular freely movable slow growing, and often accompanied by serous or bloody discharge from the nipple. It consists of papillary outgrowths from the wall of large duct. If the growth and discharge do not cease or the tumor does not remain freely movable it should be treated as if it were malignant. Malignant growths occurring after the age of 40 should be regarded with suspicion. The formation of adenomatous cysts or papillomatous growths in the cystic areas of nodules must be considered malignant. Chronic mastitis begins a benign condition. It is not yet known whether it predisposes to cancer. Bloodwood had 4 cases of cancer in 40 cases of chronic mastitis. Speer found 5 per cent. 205 cases. Ewing discovered precancerous changes in nearly 50 per cent of cases of cystic disease of the breast and Schummelbusch considered the condition only a transition stage to carcinoma.

The author states that if the growth is considered benign it may be left undisturbed or removed locally and sectioned for study. The complete operation may be done if there is any indication of malignancy at the time of local removal or later if such evidence is found. The study of the tissue. If the growth is a borderline condition the patient may reach the benefit of the double mastectomy. The growth being treated as if it were benign. The author does not use the microscope as an aid in the time of operation.

A cancerous breast should be removed completely with the axillary lymph nodes and the pectoral muscles if they or their sheaths show indications of involvement. X-ray and radium treatment may be added. The improvement in result justifies the radical operation.

The hope of the future lies in the prevention or the early recognition of the growth. The author believes that the time may come when there will be serious consideration of the removal of all women's breasts when they harbor such dangerous elements as harbored by the senescent breast.

WALTER C. BLAKE, M.D.

Strobel, C. W. Remarkable Freedom from Local Recurrence Following Chemical Removal of an Advanced Cancerous Breast. *N. York State J. M.* 1913, 22:12, 27.

Because of the fact that skin cancers, including rodent ulcer, prickle and squamous cell epitheliomas, keratoid growths, pigmented areas, which have not penetrated the deep fascia, may be removed without return, the author concludes that the development of an enlarged technique would bring larger masses under control.

Chemical removal consists in the radical and more or less rapid destruction and removal of malignant tissues by means of caustic agents, principally potassium hydroxide and zinc chloride. (It must be taken not to destroy bony structures or to penetrate the pleural cavity.)

Potassium hydroxide rapidly dehydrating and desiccating destroys all tissues with which it comes in contact. In breast cancer it is employed for the first stage to destroy the mammary gland terminal and fascial tissue layers rapidly and to remove the nipple structures. It is employed not to destroy axillary nodes or the lymph glands. It is applied for one hour with the patient under the influence of morphine or hyoscine. Its action may be stopped almost instantly by water.

The second stage of gross removal in breast cancer is accomplished with zinc chloride. Such causes gradual and painless necrosis of all tissues. The blood and lymph vessels are thrombosed. The tissues undergo discoloration, becoming pearly white and then changing into dark gray and black. The consistency of the devitalized tissues varies from that of green tanned hides to that of soft and hard sole leathers. Necrosis may extend to the depth of 1 cm after simple application. The dead tissues may be pared away from day to day following reapplication of the zinc until the general level is reached. The final plaque is left to slough out, process accompanied and facilitated by an intense inflammatory reaction of the adjacent tissues. Care is taken to prevent contact of the zinc solution with the skin as this causes pain. Water is applied freely with the zinc off and relieves the pain. Eventually the granulated surface is covered with Thiersch skin graft to prevent contraction.

The author has treated by this method sixty-one inoperable cancers of the breast. In forty cases previously reported there was no operative death, shock or hemorrhage. The average length of hospital operation was 1 and one-fourth years, but patients are still alive and free from recurrence. Three of these have lived more than seven years.

after the operation and the other three, five and one half years, four years and seven months and four and one half years respectively. In 75 per cent of the cases there was no recurrence at the time of death. Internal metastases were present in all cases as evidenced by the axillary, clavicular and mediastinal lymph glands.

The author concludes that early radical removal, before the axillary glands are involved, should give permanent cure; that the earlier the chemical treatment, the simpler, more expeditious, and more effective it will be; and that when it is applied to advanced broken down conditions the method is superior to every other method hitherto employed as regards both palliation and freedom from recurrence.

WALTER C. BURETT, M.D.

Lee, B. J. Results and Technique in the Treatment of Carcinoma of the Breast by Radiation. *Am J Roentgenol* 1923, 62.

The author has had the opportunity to observe a large number of primary operable and inoperable and recurrent carcinomata of the breast, some of which were treated by operation plus irradiation and others by irradiation alone. All of the cases have been closely followed.

The technique used in the application of both radium and the roentgen rays has been varied from time to time. The roentgen ray was used routinely for pre-operative treatment before a radical operation, one complete cycle of about four treatments being given over the entire breast and the axillary and supraclavicular regions. Following operation, after the wound had completely healed (usually in two or three weeks) two complete roentgen-ray cycles covering the entire breast and areas of lymphatic drainage were usually given. Breast carcinomata have been treated with radium by one of five methods or a combination of them, namely, pack, tray, dental mold, the insertion of bare emanation tubes and the insertion of platinum needles containing radium emanation.

With regard to the results obtained in cases of primary operable carcinomata treated by pre-operative roentgen irradiation, radical removal, and postoperative roentgen therapy as described, no definite information is given but the belief is expressed that such treatment is of value. The result obtained in primary inoperable cases appears to be prolongation of life. In recurrent inoperable carcinoma of the breast treatment by radiation offers practically the only hope of checking the disease or effecting a cure. In the treatment of these cases the roentgen ray has been employed most frequently and the radium pack or bare radium tubes have been used in well localized, sharply defined recurrent masses. In comparing a series of recurrent cases covering a period of three years with those of another New York hospital in which no radiation was used after operation or for recurrence it was found that the period of life following recurrence was three times as long when irradiation was

used as when it was not employed. With no doubt the treatment of recurrent cases by radiation gives a marked prolongation of life. The following conclusions are drawn.

All in all, the outlook in the treatment of carcinoma of the breast by radiation is most encouraging. In no case treated by surgery can the proper use of roentgen radiation be discarded. Radiation properly administered is the most effective aid in the care of carcinoma of the breast surgically treated, and in every surgical clinic pre-operative and postoperative cycles should be employed.

For primary inoperable and recurrent cases the best method at present is external radiation with the roentgen ray with fifteen-minute exposure at a 10-in. spark gap, 2-in. focal distance, 4 mm. of aluminum filtration, and 4 ma. of current followed by the implantation in the growth of bare radium tubes, complete dose being given at the first sitting.

ABRAHAM HARTING, M.D.

## TRACHEA AND LUNGS

Lahrnbecher, A. The Operation for Traumatic Hernia of the Lung (*Zur Operation der traumatischen Lungenhernie*). *Zentralbl f Chir* 9 Mar, 1908.

In the case of a man 7 years of age who was stabbed, suture of the lung after resection of a piece of the eighth rib 5 cm. long was necessary to arrest the hemorrhage. Six months later pulmonary hernia as large as a child's head developed at this site. At operation, the lung was found adherent to the opening in the thorax but not in the hernial sac, and was easily separated.

To close the hernial ring a mattress suture was first applied at the base of the hernial sac and the latter then formed into a pad by continuous perineural suture and fixed to the site of the future perineural flaps with long broad pedicles were then made from both of the adjoining ribs, reflected upward and downward, respectively, and united by sutures. A large free transplanted flap of fascia from the fascia lata was then applied over this and the muscles and skin were sutured. Primary healing of the wound followed. Three months after the operation the hernia was completely closed off and the patient was free from symptoms.

VON TAFFENBERG (2)

Cutler, E. C. The Etiology of Postoperative Pulmonary Complications. *Surg Clin N Am* 93 12, 935.

Cutler discusses the various theories regarding postoperative pulmonary complications and points out that such sequelae follow operations in two anatomical fields: (1) the abdomen and (2) the mouth, face and neck. Their incidence bears no fixed relationship to the anesthetic used. In abdominal operations pulmonary complications follow the use of local anesthesia quite as frequently as they follow inhalation anesthesia. In operations

about the face and neck it would seem that there are fewer complications following the use of local anesthesia but this is due to the fact that local anesthesia is not used in infected cases. The morbidity following gas-oxygen anesthesia is fully as great as that following ether anesthesia.

Cutler believes the term "ether pneumonia" is erroneous as aspiration plays little if any part in postoperative pulmonary complication. He calls attention to the fact that such complications occur with equal frequency in rich and poor, in persons with perfect teeth, and in those with carious teeth, and are not eliminated by the expert anesthetist. He believes that the majority of postoperative pulmonary complications are due to embolism resulting from conditions for which the anesthetist cannot be held responsible.

WILLIAM T. MCKELLEY, M.D.

Hewer G. J. and MacCreedy P. M. Lung Abscess. *Arch Surg* 93 1337

The authors summarize the Johns Hopkins Hospital records of lung abscess. Of sixty cases fourteen were not diagnosed during life. In forty-three cases operated upon there are thirteen deaths, an operative mortality of 30 per cent. The total mortality is 41 per cent. Two patients treated by lobectomy died. The authors state that undoubtedly at the present time surgery gives good results only in cases of single well-circumscribed abscesses in which the primary condition responsible for their development has disappeared. Twenty-one such cases are treated by drainage surgical, twenty-four cases and artificial pneumothorax in 11 cases. There was one death from spreading gangrene of the lung. The late result in the cases followed were very satisfactory. Long standing chronic lung abscesses with thick walls of fibrous tissue are often not cured by drainage operations.

In thirty-one cases the abscesses followed pneumonia, in sixteen they developed after an operation (four were thoracotomies). In seven cases they were due to an acute abdominal infection, and in the remaining eight they were of unknown origin.

R. C. WESS, M.D.

Lockwood, A. L. Lung Abscess. *Arch Surg* 93 1341

Contrary to the opinion of the early writers that abscess of the lung is a common sequel of lobar pneumonia, survey of the cases reported during the last century indicates that it is rare.

By lowering the resistance in the lung tissue itself lobar pneumonia, bronchopneumonia and influenza pneumonia favor the development of lung abscess following pyogenic infection.

Lung abscess occurs most often between the ages of 35 and 40 years. It is three times as common in males as in females, and occurs in one-half times as often on the right side as on the left and about twice as often in the lower lobe as in the upper. In three of every four cases it is peripheral

and involves the pleura, and in one of four there are multiple abscesses.

Numerous lung abscesses have been caused by neglect or mismanagement on the part of nose and throat surgeons, ear surgeons and dentists. Such mismanagement or neglect is manifested in the selection of the anesthetic (in not keeping the patient's head low and in not taking sufficient precaution to prevent the inhalation of foreign matter). Such sequel may be prevented by employing local anesthetic whenever possible in surgery of the mouth, nose and throat, and in teeth extraction by keeping the head low during such operations. If a general anesthetic is employed, until the patient has thoroughly awakened by taking special care to prevent the accumulation of blood and mucus in the throat and by obtaining better hypnosis in such work.

The diagnosis depends on the history, the amount and nature of the sputum, and the findings of the roentgen ray and physical examinations.

A study of the results in these cases has led the author to conclude that surgery should not be employed as soon as the diagnosis has been made unless it is definitely indicated. In many series of cases the mortality has been unnecessarily high. In case of operation, thorough medical treatment (thoracostomy and drainage) should be instituted. When this fails, pneumothorax should be produced in selected cases, surgery being reserved for those which do not respond to the other methods. The exploratory needle should not be employed.

When surgery is decided on, general and local anesthesia, with gas and oxygen if necessary, should be used, and in the majority of cases more deliberate external and topical operation should be planned than resection of the chest wall over the suppuration and cautery or blunt puncture of the breast.

If the patient's condition is such that external operation would involve too much risk, resection, blunt puncture and exploration of the abscess with the finger should be the limit of surgical interference.

The surgeon, physician, and roentgenologist should be closely associated in making the diagnosis and in the care of these cases.

R. C. WESS, M.D.

Meyer W. The Establishment of Temporary or Permanent Pulmonary Lip Fistula in the Conservative Treatment of Advanced Bronchiectatic Lung Abscess. *J. Surg. M. J. & Med. Rec.* 93 1357

In the operation described the largest cavity is opened through the chest wall and free drainage and ventilation of the cavity are established. The ventilation of the cavity in great measure stops the foul smelling sputum. The oxygen prevents the growth of the anaerobic bacteria which settle in these cavities and which may be responsible for the odor of the sputum. After operation the patient's health is greatly improved.

So far the author has not had the opportunity to close the established fistula. In 10 of his cases closure has occurred spontaneously and the condition may be regarded as completely cured. As long as the fistula remains patent the patient must observe certain precautions, one of these being to avoid bathing or submerging the fistula in water.

RAULPH B. BETHEM, M.D.

Lemon, W. S. The Interrelationship and End Results of Chronic Suppurative Diseases of the Lung. *Arch Surg* 93: 1, 343.

The author classifies the end results of acute and chronic disease of the lungs as follows: (1) resolution to normal conditions, (2) fibrosis, and (3) necrosis. Empyema, bronchiectasis, and abscess constitute the suppurative type of pulmonary disease. Acute pulmonary diseases which proceed into chronic disease are classified into seven groups.

Group 1: Acute inflammatory inflammations, which may be caused by irritating gases. These usually fuse with later groups unless death ensues.

Group 2: Acute streptococcal bronchopneumonia common during the epidemic of influenza.

Group 3: Less acute, but almost as often fatal, peridolobar pneumonia, also of streptococcal or pseudo-streptococcal origin.

Group 4: Pneumonia progressing to the formation of free or interlobar encysted empyema. In this group are the greatest number of cases of long standing conditions.

Group 5: Abscesses of the unilobular or multilobular type or cavitary bronchiectasis. Included in this group are abscesses of embolic origin and the aspiration type of bronchiectatic abscess.

Group 6: Residual inflammation which develops into chronic non-tuberculous infection of the lungs or into frank bronchiectasis.

Group 7: A resolving condition, gradually reverting to normal.

There are five reasons for the chronicity noted in Group 4.

The treatment of tuberculous empyema by open methods or methods designed for the treatment of non-tuberculous forms.

The fact that the sinus itself may lead from infected tissue may be thickened walls and may remain open indefinitely.

3. The presence of an infected rib at the base of the sinus and osteomyelitis.

4. Insufficient drainage.

5. Improper position of the surgical wound. As all purulent effusions tend to form adhesions and air and transudates do not pockets are formed, the pleura is thickened and the lung does not expand properly to fill the pleural space. Bronchial fistulae or multiple fistulae are obvious causes of chronicity.

Fibrosis is one of the end results of infection and may be of varying degree: (1) fibrosis of the pleura associated with fibrosis within the lung; (2) fibrosis extending from the hilum; and (3) fibrosis within the lung and proceeding throughout the interlobular

septa, or round the bronchi and vessels or in the alveolar walls. Whether it is tuberculous or non-tuberculous, fibrosis is one of the agencies which cause changes in the position of the mediastinal structures the most obvious of which are the heart and trachea.

If there is fibrosis with persistent rough bronchiectasis must also be reckoned with first because the strength giving wall of the bronchus, which often has been weakened in the original disease of the lung gives way under the added pressure due to cough, and second because in the fibrotic lung the damaged bronchus has lost its normal elastic support and dilates when the interbronchial pressure is raised (McPhedran). This results in more apt closure when the pleura anchors the lung to the chest wall, condition present in the majority of Lemon cases of bronchiectasis. The other factor may enter into bronchiectasis viz traction on the bronchi from inspiratory movements of the thorax, and an increase of endobronchial pressure associated with effort in coughing.

Bronchiectasis following influenza does not develop for six months or a year after the acute illness.

Norris and Landis state that pulmonary fibrosis and bronchiectasis are due to the same cause. The bronchi were dilated in about 80 per cent of the cases of massive fibrosis.

Lemon emphasizes the importance of recognizing the relationship between abscess and bronchiectasis because bronchiectasis may develop during the healing of an abscess and as patients with bronchiectasis are prone to infection abscess or bronchopneumonia may develop.

Amniotides or tuberculous meningitis must be taken into consideration in operative procedure, causing collapse of the lung in cases of unilateral tuberculosis, particularly if the disease has been of long duration. Lemon reports a case to illustrate the difficulty in the diagnosis in long-standing chronic pulmonary suppuration, and the benefit which can be obtained by surgical intervention. The patient had had influenza three years previously during a time when the scarcity of physicians in his outlying country did not permit him to have careful attention. The history and examination indicated that influenza complicated by bronchopneumonia was followed by empyema. The empyema cavity had formed fistula with the bronchus, and as a result there was continuous expectoration of large amounts of purulent material. The patient was a wheel chair invalid with chest deformity and an extreme grade of arthritis and pulmonary osteoarthropathy.

This case illustrates the principle that if patients continue ill when their primary infection should be over it must be assumed that they are suffering from suppurative disease which should be attacked at once. The peculiar deformities of the extremities, arising from all degrees of simple clubbing or hypochondriac deformity to true pulmonary osteoarthropathy are one of the interesting accompaniments of suppurative disease of the lung. Abscess

of the lung resulting from pneumonia represents the patient's failure to react effectively.

A subgroup of cases of suppuration of the lung are classified as non-tuberculous infections, these have been studied recently by Coomer in the Section on Diseases of the Chest in the May Clinic. The conclusions drawn are as follows:

Non tuberculous infection of the lung is non-specific disease but deserves a name as separate disease entity.

The essential features are cough, marked chronicity, exacerbations, little or no fever and a few other constitutional symptoms, usually purulent expectoration, lack of progression, and location of the lesion almost always in the bases.

3 The principal physical sign is moist rales.

4 The diagnosis is based mainly on the chronicity of the cough, the slight effect on the general health, the location of the signs in the bases and the persistent absence of the bacilli of tuberculosis.

5 In the differential diagnosis, chronic bronchitis, tuberculosis, frank bronchiectasis, and bronchopneumonia must be considered.

6 The prognosis must be guarded in the cases of adults.

7 The treatment is mainly postural treatment.

Ringer F H. Reflections upon Nine and One-Half Years Experience with Artificial Pneumothorax. *N York M J & Med Rec* 1922, 129, 14.

Artificial pneumothorax is now being used in sicker cases than formerly and in many hopeless cases it is employed as a purely palliative measure. Cases of apical involvement have a better prognosis than those in which the base of the lung is involved because in the former partial collapse is more often possible. Cases of profuse hemorrhage give at times the most brilliant results.

Atmospheric air is now used exclusively and it has become customary to refill at shorter intervals and with less massive doses. The use of high pressure to tear adhesions is dangerous.

Accidents incident to artificial pneumothorax are becoming less common. It has been definitely established that partial collapse is productive of good results. Bilateral compression is not justifiable procedure. The most frequent complication is fluid. Fluid is dangerous because it favors gradual obliteration of the pleural cavity. Fluid was encountered in about 25 per cent of the thorax cases. The appearance of activity or an increase of activity in the uncollapsed lung is not an infrequent complication. When total collapse is possible refilling should be continued for six years. Partial collapse should be continued indefinitely. When collapse has been done for hemorrhage and the uncollapsed lung is affected, collapse should be maintained only long enough to plug the bleeding point. Although good results may come from artificial pneumothorax in cases of lung abscess, surgical treatment is to be preferred.

To epitomize briefly the conclusions reached as a result of nine and one-half years experience with artificial pneumothorax, it can be said that the method is distinctly valuable. Immediate results are often surprisingly brilliant, the percentage of really permanent arrests disappointingly small. Of eighty-five patients treated by at least partial pneumothorax only 16 per cent are well and only 3 per cent owe their recovery to the artificial pneumothorax. Thirty per cent have been benefited.

RAIMON B. BETTINA M.D.

Davies, H. M. Surgical Treatment in Cases of Pulmonary Tuberculosis. *Brit M J* 1922, 1, 123.

In cases of pulmonary tuberculosis collapse of the lung offers a chance of improvement after medical treatment has failed. When the lung is placed at rest, its resistance to tubercle bacilli is increased and secondary changes, such as bronchiectasis, which in the later stages of tuberculosis may cause the most aggravating symptoms, are sometimes prevented. Surgical collapse is usually indicated only when the lesion is unilateral, but in few instances the author produced an artificial pneumothorax in the presence of bilateral lesions, compressing first one lung, then allowing its complete re-expansion, and then compressing the other lung.

Adhesions form the chief obstacle to successful collapse by artificial pneumothorax. These are dealt with by various methods, depending on their size, position, etc. Occasionally it may be possible to stretch them adhesion by the prolonged use of high intrathoracic pressure. Occasionally also it may be possible to tear an adhesion by high pressure, but this is fraught with the danger of tearing the lung. If the adhesions are very thin and string like and can be seen readily with the fluoroscope they may be divided under X-ray guidance by means of a tenotome stabbed through the chest wall. Jacobson's method has a limited application.

For dense adhesions holding the upper lobe, extrapleural apicalysis may be performed. Paraffin may be employed to maintain the collapse, but transplanted fat flap is much better.

The lung may be collapsed also by collapsing the chest wall. The author prefers rib resection with removal of practically the entire rib to rib mobilization in which the anterior and posterior sections of the rib are removed and the ribs are allowed to drop downward or inward.

RAIMON B. BETTINA M.D.

Schlesinger E. Fibrosis of the Lung Following Ligation of the Pulmonary Artery Combined with Phrenicotomy and Partial Occlusion of the Pulmonary Veins. *Arch Surg* 1922, 75, 124.

The author summarizes the surgical methods presented under consideration for the cure of chronic infectious disease of the lung, particularly tuberculosis. Two methods now widely used in cases of unilateral pulmonary tuberculosis are artificial pneu-

mothorax and extrapleural thoracoplasty. These methods act indirectly.

Direct influence on the physiological function of the lung is brought about by ligation of the pulmonary artery of one lung or one lobe. The bronchial arteries furnish a sufficient supply of blood. This procedure may be reinforced by paralyzing the diaphragm or cutting the intercostal nerves. The chronic stasis which results causes replacement of the lung tissue by fibrous tissue.

Phrenotomy performed at the same time as the ligation is very helpful. The paralyzed diaphragm and the movable mediastinum tend to follow the retracting lung. On the theory that tuberculosis occurs most often in persons with organic heart lesions, partial occlusion of the pulmonary veins is suggested as a further aid. A third method of bringing the lung to functional rest consists in blocking the air passages by blocking the main bronchus with a piece of fascia.

R. C. WESS, M.D.

### HEART AND VASCULAR SYSTEM

Roberts, J. B. The Value of Pericardiotomy in Dog, Node and Treatment. *Arch Surg* 9 4, 74.

In obscure conditions the diagnosis may be established occasionally and permanent relief given with negligible risk by digital exploration of the heart sac. The earliest American operation for rupturing cardiac wound was performed by Stewart. Other investigations have drawn attention to clinical and experimental work in cardiac surgery.

The author has had considerable experience in this line of work. The case which prompted the preparation of this article was that of a boy 7½ years of age whose condition had been diagnosed as pericarditis with effusion. The lungs were negative. The heart showed an increased area of dullness, extending to the nipple line on the right side and beyond the nipple line on the left side. The heart sounds were fairly normal, but an evident to-and-fro murmur was transmitted to the left axilla. The child was admitted to the hospital in July and was under treatment until the following September. When roentgenogram was made. It was then sent to the laboratory with clinical diagnosis of pericarditis with effusion and left pleural effusion.

His temperature record for September varied from normal to 99 degrees F. with occasional rises to about 100 degrees F. and occasional decreases to normal. The latter part of September it was decided to tap the pericardium.

Thorough examination revealed rather loud cardiac sounds with dullness in the precordial region, but the patient was not especially cyanotic, and as he lay in bed his pulse was rather strong. Another physician and the author discussed the fact that the clinical examination did not give the impression that the patient was suffering from a large pericardial effusion.

An aspirating needle was inserted between the xiphoid cartilage and the seventh rib but no fluid

was obtained. An incision was then made down through the left fifth interspace, and the pleura and pericardium were exposed. When the needle was again inserted through the exposed pericardium no fluid except blood was obtained. The pericardium was opened by a small incision and the index finger inserted into the pericardial sac. No fluid was obtained but the heart was found to be very large. Under careful treatment the patient improved. This improvement was due evidently to the change in treatment resulting from the correction of the diagnosis and perhaps to relief of pressure on the enlarged heart by the incision in the heart sac which must have enclosed the large heart tightly.

Valuable additional history was obtained after the operation. The child had been taken acutely ill in June, with high fever, general depression and malaise. He was in bed one week, but then got up and felt better. In July he had an attack of pain in the upper abdomen which was diagnosed as gastrointestinal colic. His breathing had been rapid. He had never complained of dyspnea and cardiac pain until then. His tonsils had always been enlarged. Two months after this attack he was operated on for the removal of hypertrophied tonsils and adenoids under ether anesthesia. His general health then improved markedly from week to week.

This case and other experiences in pericardial surgery have led the author to this conclusion that careful investigation by percussion, auscultation and roentgenographic study should always be made before resort is had to tapping or other surgical attack. Laboratory research has apparently proved the possibility of entering even the hollow heart and remedying defects of its valvular apparatus.

Diagnostic pericardiotomy should be done between the fourth and fifth or the fifth and sixth ribs. In the fourth space, the middle of the incision should be at point little to the right of and below the nipple close to but below the upper edge of the fifth rib. An elliptical flap with its convexity downward, should be turned so as to expose the entire width of the fourth interspace.

If the pericardium is believed to contain pus, small puncture with the veterinary hypodermic syringe may be made before the pericardium is opened. If pus is found, new incision may be made nearer the sternum or drainage may be provided in that region to save the pleural cavity from contamination.

Whenever it is necessary to expose the heart for a wound caused by foreign body, somewhat triangular osteoplastic flap should be turned up by dividing the fourth and fifth cartilages, the intercostal muscles being used as hinge, or by the trap door suggested by DeLorme.

GEORGE E. BELLER, M.D.

Coffe, D. W. Resuscitation Intracardiac Injections. *Surg Gynec & Obst* 912, 2227, 77.

The author reports the cases of five patients with cessation of the heart beat who were revived by the use of intravenous or intracardiac injections. (



drenalin. Two of the five made an uneventful recovery. In all of these cases other methods of resuscitation were tried without success. The successful method consists in the injection into the heart of 1 to 2 ccm of adrenalin (1:1000) by means of a long spinal puncture needle. Heart blood must be aspirated to prove entrance into the heart cavity. Speed is important and the heart must be massaged. The same results may be obtained by intravenous injections. The procedure described is not a substitute for the usual resuscitation measures; it is indicated only after or during measures have failed.

MARCUS H. HOSKAY, M.D.

### PHARYNX AND OESOPHAGUS

WELSH, E. Congenital Atresia of the Oesophagus, with (Oesophago-tracheal) Fistula. Report of Three Cases. *J Am M Ass* 9 5, 1922, 16.

Plum collected 36 verified cases up to 1917. Since that time fifteen cases have been reported. Hence the anomaly demands attention because of its frequency.

In the cases reported since 1917 and in sixteen of the 36 cases collected by Plum, gastrostomy proved futile. Death from starvation is certain without operation, and if operation is performed death results from shock, hemorrhage, suffocation, or bronchopneumonia, the last probably due to regurgitation. Jejunostomy has been tried once without success. Richter treated two cases by gastrostomy plus closure of the lower oesophageal segment but death occurred within twenty hours.

The malformation is practically always the same. The upper end of the oesophagus is usually dilated and ends in a blind sac at about the level of the tracheal bifurcation. The lower end opens into the trachea, 1 or 2 cm. below the bifurcation. Other malformations, such as atresia ani, may be associated with this condition.

The diagnosis is made readily. The child regurgitates almost immediately after taking food. Suffocative attacks attended by choking and cyanosis follow attempts to swallow. The stomach inflates with each inspiration and the breath sounds over the abdomen are more audible than normal. The passing of a catheter into the oesophagus under the fluoroscope and oesophagoscopy make the diagnosis certain.

The author reports three cases, almost identical clinically and anatomically, in which gastrostomy was performed. Feeding through the gastrostomy opening caused choking attacks. The first child died of bronchopneumonia eleven days after the operation, the second one day after the operation, and the third, three days later. In each case the upper segment of the oesophagus ended in a blind pouch just above the tracheal bifurcation and the lower oesophageal segment opened into the trachea near the bifurcation.

WALTER C. BURNETT, M.D.

Fischer, H. Surgical Treatment of the Oesophagus. *Arch Surg* 92, 7, 256.

In its development the surgery of the oesophagus has passed through several distinct stages, viz: (1) the extrapleural dorsal approach with attempts to reconstruct the lumen by suture; (2) the transpleural approach under differential pressure, with attempts to restore the tube, with or without tracheostomy; (3) the stomach by suture or bottom of various types; (4) the transpleural removal of the whole oesophagus from an incision in the neck, the stump being placed outside, and later reconstruction of an oesophagus by plastic operation; (5) extrapleural removal of the entire oesophagus by invagination by combined method from the abdomen and the neck; (6) extrapleural removal by combined method from the abdomen or neck or from the abdomen, neck, and back, with tracheostomy of the stomach into the posterior mediastinum.

Fischer admits that at present the results of surgery of the oesophagus are not good, only in cases of carcinoma of the cardiac portion have patients recovered from the operation and have lived. He believes the time is not far distant, however, when conditions of the oesophagus now regarded as hopeless may be successfully attacked.

The article is an excellent summary of the development of oesophageal surgery and is supplemented by an excellent bibliography.

RALPH B. BROWN, M.D.

### MISCELLANEOUS

MOORE, L. A. Dermoid Cyst of the Anterior Mediastinum. *Cysta dermoide du mediastin anterieur*. *Arch f anat-hist-clin* 9, 227, 1922.

Three months after normal parturition the patient in this case is reported complained of painful area on the anterior surface of the right chest wall just above the upper surface of the liver. The pain first occurred in attacks lasting 1 or 2 days but later became constant. Coughing, expectoration, and fever are not present at any time. Treatment with fracture of rib with therapeutic light and exploratory punctures caused no improvement. The thoracic first saw the patient three years after the onset of the condition, when she had lost considerable weight, appeared cachectic, and complained of pain chiefly in the right anterior axillary line immediately above the upper border of the liver. Respiration was short and difficult but no time as there was no increase in temperature.

Dullness as present over the right chest wall anteriorly as high as the second rib in the mammary line, and posteriorly to the scapula. There was complete absence of tactile and vocal fremitus over this area. Exploratory punctures yielded a straw-colored fluid which on smearing was tinged reddish brown. X-ray examination revealed dense shadow on the right side of the thorax as high as the second rib and extending to the left beyond the

heart shadow. In an examination with pneumo-peritoneum the gas was demonstrated in spaces between the upper surface of the liver and the under surface of the diaphragm. A diagnosis of tumor of the mediastinum was made.

At operation the third, fourth, fifth, and sixth ribs on the right side were excised. A large cyst containing a large amount of degenerated material and a thick brownish fluid and small secondary cysts were found. The right lung as compressed against the posterior thoracic wall. The cyst wall was dissected free from the costal and ternal pleura but when the attempt was made to dissect it from the pericardium no large vessels at the root of the lung profuse bleeding occurred. The cyst was packed tight with gauze. After a twenty post-operative period the patient recovered. Later the right mammary gland was turned into the thorax to fill the cyst. *Low, F. D. M. D.*

Lilienthal, H. Posterior Mediastinotomy. *Arch Surg* 93 2 74

Lilienthal describes his technique for extrapleural posterior mediastinotomy and reports a case treated in this manner. The case was that of a man aged 43 years who for 12 months had suffered pain in the dorsal region accompanied by cough and expectoration. A diagnosis of tumor of the mediastinum continuous with the lung was made. The specimen removed at operation revealed a reticular inflammatory process but no evidence of neoplasm. After the operation the local symptoms improved and the wound healed in a few weeks but the patient developed a left hemiplegia and delirium and died. Autopsy was not permitted. It is probable that death was due to metastatic cerebral foci.

The principle of the author's technique is retraction of the divided ends of the ribs at right angles to their long axis, the extent of the available space being determined only by the length of the wound. The patient lies on his right side but turned about 30 degrees to the front. The thighs are flexed, the right arm is placed slightly behind the patient, and the left arm is placed forward and upward. A pillow is used to cause slight scoliosis. The operation is performed under general or local anesthesia. The author calls attention to the value of differential pressure in case both pleural sacs are accidentally opened. A high and low procedure are described.

Low posterior mediastinotomy is performed by making an incision on the ninth rib, beginning 8 in. from the spine, extending it along the rib to the edge of the long paraxial muscles and then curving it upward parallel with the space for five interspaces. The ninth rib is resected subperiosteally beginning just anterior to the angle and proceeding laterally as far as the wound will permit. The finger is then inserted slowly between the posterior unresected part of the rib and the pericostum and this membrane is peeled forward with the pleura until the eighth rib is reached. When the eighth rib has been

freed from the pleura it is divided and retracted and the procedure is continued upward until sufficient space has been gained. The contents of the mediastinum are thus exposed. It is sometimes difficult to recognize the esophagus but it may be rendered clearly visible by passing a bougie with a small electric lamp in its end which shines through with a bright crimson glow. In exposing the esophagus one must guard against aspiration by applying a small pledget of 5 per cent cocaine. The esophagus may be followed down to where it passes through the hiatus in the diaphragm.

The high operation is carried out in much the same manner but the seventh or the sixth ribs are those first resected, and the fifth, fourth, and third ribs are divided posteriorly. The best approach is from the left side. *R. C. WOOD, M. D.*

Archibald, E. W. LeWald, L. T., Torck, F. J. and Others. Surgery of the Mediastinum, including the Heart and Esophagus. Abstract of Discussion. *Arch Surg* 93 3 46

ARCHIBALD stated that his experience with the posterior extrathoracic operation in pulmonary tuberculous numbered fifteen cases with practical cures in from 51 to 35 per cent. He reported a case of carcinoma of the esophagus just above the arch of the aorta. A gastrostomy was performed and three weeks later he operated for removal of the cancer. He went in from the right side removing the sixth and seventh ribs. The pleura was difficult to separate. The operation was performed under positive pressure. The pleura was torn in several places and repaired. The adherent tumor was excised. A mediastinitis developed and the patient died on the sixth day. Archibald regards the method used as the only rational procedure but stated that it is often much more difficult than Lilienthal led us to expect.

LEWALD mentioned three cases of what were probably dermoids of the chest. One evacuated spontaneously through the bronchus and trachea. He referred also to a case of rapidly growing lymphosarcoma of the mediastinum. He had under observation a child and a woman whose stomachs were in the thoracic cavity.

TORCK in discussing carcinoma of the esophagus, said that improvement in the results depends upon improvement in the technique and early recognition of the condition. The status of diagnosis is that of pyrocardia thirty-five years ago. The esophagoscopes should be used more frequently and the condition recognized while it is still confined to the mucous lining. When it is diagnosed early the likelihood of infection is light. Torck has not decided whether the transpleural or the extrapleural route is to be preferred.

GRAHAM mentioned the case of a moribund man with a large mediastinal lymphosarcoma completely surrounding the trachea and heart. A emergency decompression was attempted by longitudinal splitting of the sternum. The patient died in half an

hour Graham mentioned also case of thoracic stomach in which diagnosis of empyema following pneumonia was made, thoracotomy was performed, and the stomach opened and drained. The operation left a discharging sinus through the chest wall. Graham called attention also to the method developed experimentally in his laboratory in which double cuff of fascia lata is placed about the portion of the oesophagus to be resected in carcinoma and two weeks later the oesophagus and the inner layer of fascia lata are removed, tube being left for regeneration. The procedure gave fairly good results in dogs.

SCHLAEPFER suggested that preliminary gastrostomy or jejunostomy combined with X-ray and radium treatment might be advisable before operating on carcinoma of the oesophagus.

MILLER spoke of some experimental work on dogs in which the stomach was drawn into the thorax to replace the major portion of the thoracic oesophagus. He stated that the lower portion of the oesophagus is supplied with strong layer of submucosa.

YATES reported a disaster following mediastinal decompression. He is in favor of X-ray treatment rather than decompression.

HARTMAN mentioned similar experience.

GARY suggested the injection of alcohol into the pleural cavity to cause a sterile chemical inflammation and adhesion between the parietal and visceral pleura, stating that this might prevent septic pleuritis as complication of resection of the oesophagus for carcinoma.

MATAS mentioned case of mediastinal lymphosarcoma in which he made a complete longitudinal division of the sternum as a decompression. The patient died four hours later. The idea of decompression as applied to intrathoracic neoplasms has no analogy in the principle of decompression for the relief of intracranial tension. Morphine and other succedanea gave greater relief.

FISCHER stated that he believed he would continue to use the transpleural approach for oesophageal tumors.

LELIEVRE advised against operating after radium treatment in cancer of the oesophagus on account of the dense adhesions. He stated that for correct understanding of the relative advantages of surgical procedures, a must operate on such dogs and healthy men. He reported successful mediastinal decompression in the case of patient with large retrosternal goiter. R. C. WISE, M.D.

Pryor J. H. Immobility of the Diaphragm, with Report of Cases of Bilateral Immobility. *N. York J. of Med. Sci.* 1923, CIV, 75.

This article is based on 45 cases in which there had been pleurisy with effusion or empyema. The interval between aspiration or evacuation and fluoroscopic examination is about a year and a half. The cases are classified as follows: (1) empyema in the child, (2) empyema in the adult, (3) pleurisy with

effusion, (4) pleurisy with effusion and clinical pulmonary pneumonia, and (5) pneumothorax and effusion.

From the complete series it is found that the diaphragm remains unimpaired in one of six cases, the same proportion has a restricted compass of motion, and in two-thirds of the cases all motion on one side is lost.

Fixation of the diaphragm is not as common in empyema in the child as in the adult. The tendency to more rapid recovery is apparent. Immobility of the diaphragm occurs in 50 per cent of the cases. In complete evacuation, undiscovered pockets, premature closure of the opening for drainage and insufficient attention to expansion of the collapsed lung are the causes of injury to the heart and diaphragm.

In the adult, empyema is a far more serious condition. Of fifty cases observed only eight showed no immobility or injury to the diaphragm. Pericarditis, adhesions between the pericardium and pleura, and twisting of the heart are much more common than in generally behaved and explain symptoms and complaints frequently ascribed to these cases.

Pericarditis also occurs but is detected only if an autopsy is performed.

Loss of function of the affected leaflet of the diaphragm is not so common in pleurisy with effusion as in empyema. In about half the cases some motion of the diaphragm remains. The observations in cases of pleurisy with effusion and pulmonary tuberculosis are very similar to those made in uncomplicated pleurisy with effusion.

In pneumothorax with effusion the ultimate results are similar to those of pleurisy with effusion. The author calls attention to the danger of crippling the diaphragm in artificial pneumothorax.

Impairment of the movement of the diaphragm may extend to the side opposite that affected by the pleurisy or empyema. There was no compensatory increase in motion of the unaffected side. Symptoms are relatively uncommon, but there may be palpitation, impairment of breathing, cyanosis and inability to work as before.

Six cases of bilateral immobility have come under observation. All were cases of chronic tuberculosis and all of the patients had had pleurisy. The principal complaint was shortness of breath. The X-ray examination showed flattening of the dome of the diaphragm, the pericardial attachment forming the apex of an inverted V. The heart shadow was long and narrow, its original shape being entirely lost. All of the patients steadily declined and died in short time. Only one lived for two years. Two of the cases of bilateral immobility are cases in which artificial pneumothorax as employed for treatment.

A syndrome noted in this condition and never observed in any other, the author calls pleurocardiac incompetency. The findings include a distinct dyspnea, a decrease in the cardiac area

faintness or absence of the apex beat, faintness of the heart sounds, very low blood pressure, anemia, gradual loss of flesh and strength, costal breathing, absence of Litten's sign, and history of pleurisy and pulmonary tuberculosis.

In such cases one should look for X-ray evidence of bilateral immobility of the diaphragm.

There is diversity of opinion as to the cause of diaphragmatic immobility. It has been ascribed to paralysis of the phrenic nerve, to the pressure of fluid in the pleural cavity to adhesions, and to inflammation of the diaphragm leading to degenerative changes and fibrotic thickening. In the author's opinion the most probable cause is morbid change in the diaphragm.

I. E. BASKIN, M.D.

Whittemore, W. Teratoma of the Right Chest Cavity: Report of a Case. *Arch Surg* 93, vi, 28.

The author reports the case of a 15-year-old underdeveloped and undernourished boy who had had symptoms of tumor in the right side of the chest and bulging of the chest wall for fifteen months.

Operation consisted of resection of the sixth rib for 8 in. section of the fifth, seventh, and eighth ribs near the vertebral column, removal of the tumor and ligation of the pedicle. The patient recovered.

The tumor was a cystic teratoma the size of large cantaloupe. It contained bony plates, epidermis, and hair.

The lung showed no tendency to expand.

R. C. WARR, M.D.

## SURGERY OF THE ABDOMEN

### ABDOMINAL WALL AND PERITONEUM

Ellerbrook, N. The Operative Treatment of Umbilical Hernia. (*Zur operativen Behandlung des Nabelbruches*.) *Deutsche med. Wochenschr.* 9, xiv, 3.

Ellerbrook reports a case of umbilical hernia the size of an apple in which he obtained successful result by circumcising the skin, opening the peritoneum, replacing the intestines, and suturing the hernial ring. If these herniae contain the liver and the entire intestine and are associated with malformation of the abdominal wall they may reach a considerable size. For such cases, Ahlfeld has recommended cleaning the hernial covering with 86 per cent alcohol, replacement of the contents, approximation of the recti muscles, the application of a tight abdominal binder to retain the intestines, and the application of alcohol compresses to prevent disintegration. Oberheimer had devised an extraperitoneal operation.

Care is necessary in ligating the mesobial cord for if a beginning hernia of this type is not recognized by the midwife the intestines will also be ligated. Such herniae of large size may cause difficulties in labor. When the hernia has ruptured and the viscera are displaced, the intestines may be mistaken for the umbilical cord. If a child is born with this condition, the operation described should be done at once after cleaning of the viscera. In one case an operation was performed successfully by Reed in spite of considerable soiling. *Vomeron* (2).

### GASTRO-INTESTINAL TRACT

Alvarez, W. C. New Light on Gastric Peristalsis. *Am. J. Roentgenol.* 923, 2, 3.

With the aid of a specially devised apparatus the author has been able to obtain electrogramms and mechanograms which have increased our knowledge of gastric peristalsis. Details of most of the experimental work have been reported elsewhere in previous articles.

Methods are now being devised for obtaining multiple and simultaneous mechanical and electrical records of the activities of the stomach and bowel.

A few electrogramms of the human stomach have been obtained. The electrograms of the digestive tract closely resemble the corresponding mechanograms.

New evidence has been obtained as to the location and behavior of the gastric pacemaker. Stomach blocks and dislocations have been observed. Coils discovery of gastric systoles has been confirmed.

Several peculiar types of peristalsis are described, and certain contractions are shown which might be called, by analogy, pyloric extra-systoles.

Two or three different types of contraction may take place simultaneously in one segment of the stomach as in one segment of bowel.

There is close relation between the activities of the pyloric end of the stomach and those of the duodenum.

It is hoped that the new studies will eventually help the physician and the roentgenologist to recognize and interpret syndromes in the same way as the polygraph and the string galvanometer have helped the heart specialist to recognize arrhythmic fibrillation or heart block from the history or from the feel of the pulse.

ALFRED HARRIS, M.D.

Appert, F. L. The Mechanism of Hyperchlorhydria. *Med. J. Australia*, 923, iv, 33.

Hyperchlorhydria can be brought about by increased gastric secretion and by increased rapidity of evacuation, but is lowered by an increase of the normally occurring alkaline regurgitation from the duodenum and is due more to failure of the neutralization apparatus than to any other factor.

The opening and closing of the pylorus is a matter of tension on the two sides of the pylorus and some sensory mechanism in the duodenum rather than Canon's law. Rise of gastric tone is brought about by nervous factors. Hyperthyroidism and nerve strain may decrease duodenal tone. Acidity of the duodenal contents may raise the tone.

Actual pancreatic disease or obstruction of the channel by which the juice normally enters the stomach may cause hyperchlorhydria.

The use of 0.4 per cent hydrochloric acid for testing pancreatic juice is under investigation.

The fractional test meal facilitates the study of obscure dyspepsias. (CARL F. JAMES, M.D.)

**Radtch, H. F. The Distribution of Acid Cells Along the Dorsal Curvature of the Stomach and the Possible Relation to the Occurrence of Gastric Ulcer.** *Surg. Gynec. & Obst.* 9: 322, 1927.

The average distribution of the acid cells along the lesser curvature is 65 per cent of the distance from the cardia orifice. They are found in great numbers in the fundus and are numerous toward the cardiopyloric juncture. Beyond the cardiopyloric juncture they are widely scattered. Along the greater curvature they are found in about 55 per cent of the distance from the cardia orifice being numerous in the fundus and decreasing toward the cardiopyloric juncture. Along the greater curvature they extend to 51 per cent of the distance. Here also they are located chiefly in the fundus and do not extend beyond the cardiopyloric juncture.

The thickness of the mucosa in the various portions of the stomach varies considerably in different stomachs.

In conclusion the author states that although there may be some relation between the occurrence of ulcers in the different regions of the stomach and the distribution of the acid cells the latter is too slight to be decisive. (J. A. H. MAJOR, M.D.)

**Reid, H. The Pathological Relationship between Ulcerative Processes in the Stomach and Duodenum and Epigastric Hernia (Zur der pathologischen Beziehung zwischen den ulcerösen Prozessen im Magen und Duodenum und den epigastrischen Hernien).** *Arch. f. kl. Chir.* 9: 23, 1927.

The relationship between hernia of the lesser omentum and the stomach has been recognized for a long time. In epigastric hernia therefore an exploratory laparotomy is indicated.

The author has systematically searched for gastric disorder in every case of epigastric hernia seen during the past 5 years. In 51 per cent of the cases of ulcer in such operation as demonstrated epigastric hernia as found. On the other hand 52.3 per cent of epigastric hernia were associated with ulcerous processes in the stomach or duodenum. Males are affected more frequently than females.

Only a small percentage of the patients had no previous gastric symptoms. A number complained only of pain in the stomach and were cured by the presence of hernia. In persons who had no previous symptoms the stomach and duodenum

were found intact at a exploratory laparotomy. Cases with pronounced gastric symptoms but in which the exploratory laparotomy revealed nothing but the hernia were especially interesting.

Laparotomy laparotomy is unnecessary when the ulcer may be definitely excluded by ordinary diagnostic measures. General complaint regarding nervousness, a feeling of pressure, and pain in the abdomen only under certain conditions are often facts in the history leading to false diagnosis. On the other hand the presence of gastric or duodenal ulcer cannot be excluded on the basis of relatively slight symptoms. As a rule moderate acidity alone is found on chemical examination of the gastric contents. Hyperacidity is found more often than acidity. In the cases of hyperacidity the presence of a ulcer appeared probable even from the history but on the whole the roentgen test could not be relied upon.

Roentgenography was used routinely in all general examinations. It is correct to know, however, an ulcer is not recognized being based only on exploratory laparotomy. When the epigastric hernia is not associated with ulcer of the stomach or duodenum, taking pressure in the vicinity of the stomach noted in a large number of cases and signs of stomach disease. The signs of increased tonicity are noted unfolding of the stomach on filling a dome like tense gastric bubble, bloating of the mass of the stomach and elevation of the greater curvature. There is undoubtedly a pathologic relationship between ulcer and stomach and epigastric hernia. Very often peristalsis is markedly increased, probably reflex. The period of spulsion is then shortened and on further examination the emptying is found delayed. The repeated observation of gastric condition and the other symptoms point to a irritation nervous due to the epigastric hernia.

The conclusion is drawn that the methods of examination fail in the obscure and doubtful cases. Exploratory laparotomy being necessary for the diagnosis. It seems very probable that there is a genetic relationship between the ulcerative processes in the stomach and duodenum and epigastric hernia. It must be assumed that spastic conditions are produced in the gastric all, and these as suggested by Bergmann cause ulcer formation. Reflex through the stimulation exerted by the hernial content. It is very difficult to prove that the epigastric hernia is present before the first epigastric symptom. The reflex does not necessarily originate in an adhesion tip of peritonitis, as true peritoneal hernia are rare. Tension on the peritoneal ring due to increased intra-abdominal pressure may be sufficient. The relationship between epigastric hernia and the excitatory neurotic syndrome noted in 50 per cent of the cases cannot be merely coincidental.

The author has previously described very similar phenomena in the stomach and duodenum occurring in gallstone colic. (SCHMIDT, A.)

Brasch W. Pylorotomy for High Ulcer of the Lesser Curvature (Pylorotomie bei hochliegenden Ulcus der kleinen Kurvatur) *Wien. klin. Wochschr.* 9 1, m. 243

In the case of an ulcer lying high in the stomach transverse resection, although it has its disadvantages, is considered the operation of choice. The mortality following it is greater than that of flowing gastro-enterostomy. It is sometimes apt to cause an hour glass stomach, recurrence cannot be absolutely prevented, and finally it is a severe operation which cannot be considered in every case. As pylorospasm is a constant complication of high ulcer, and as this prevents its healing, the author performed a pylorotomy in case of this type in which resection could not be carried out on account of the patient's condition. This was a case of callous ulcer of the lesser curvature at the junction of the cardiac and middle thirds. Upon examination one and a half mo. after operation, the patient was free from symptoms.

Whether pylorotomy can be performed in all such cases is for the future to demonstrate, but the operation has many advantages over gastro-enterostomy and resection in that many of the well recognized complications which may follow gastro-enterostomy are absent, it is a relatively simple procedure, and the resulting condition permits the stomach to empty itself readily. *Von Hoser (Z)*

Roepke, W. How Should an Ulcer of the Stomach and Duodenum Which Has Perforated into the Abdominal Cavity Be Operated on and Treated? (Wie soll das frei in die Bauchhöhle durchgebrochene Geschwür des Magens und Zwölffingerdarms operiert und behandelt werden?) *Deutsche med. Wochschr.* 92, XIV. 499

The author reports his experiences in nineteen cases of ulcer of the stomach and duodenum which perforated into the abdominal cavity.

It is now generally recognized that the treatment of such cases is surgical. The fact that in certain cases the liver or the omentum will restrict the accumulation of gastric contents in the upper abdominal space and thus prevent diffuse peritonitis for some time or permanently cannot be used as an argument against operative treatment.

The operation should be undertaken as soon as possible. As a rule it will bring relief as suppurative peritonitis generally does not develop until after twenty-four hours.

In the thirteen cases in which operation was done within the first forty-eight hours there were no deaths, while in the six cases in which it was performed after forty-eight hours the mortality was 50 per cent. Complications, such as pelvic and subphrenic suppurations appear within eight hours of the operation in 10 per cent of the cases, within forty-eight hours in 37.5 per cent, and after forty-eight hours in 66.6 per cent.

Roepke opens the abdomen by median incision above the umbilicus. This should be made no longer

than absolutely necessary as every additional enlargement means greater cooling of the peritoneum and increases the danger of visceral prolapse which may require forceful reposition and lowers the resistance of the peritoneum.

In regard to the treatment of the perforated ulcer itself Roepke declares himself a decided opponent of any procedure including resection of the diseased portion of the stomach. As a rule, he merely sutures over the perforation. He warns against closing the callous parts of the border to obtain normal movable gastric wall for the suture because this procedure may cause a large defect the closure of which prolongs the operation. To reinforce the suture or the approximated wound edges, tip of the omentum or the hepatic ligament or free transplant may be sutured to it. Ulcers treated in this manner tend to heal quickly especially when gastro-enterostomy is done in addition. A strip of gauze gives sufficient drainage of wound secretions.

The infected abdominal cavity should be treated by the simplest and most rapid procedure possible. Roepke does not approve of irrigation, preferring mere sponging out of the foreign material. The peritoneum will take care of the inaccessible portions, either resorbing or encapsulating them. The mortality in cases treated by irrigation (83 reported in the literature) was 30.8 per cent while in Roepke's cases it was 5.7 per cent.

Gastro-enterostomy is performed in the presence of stenosis or when its development is feared as for instance when the site of the ulcer is near or at the pylorus or in the duodenum where constriction may be caused by healing as well as the use of suture. The gastro-enterostomy relieves the situation in every case particularly when only simple suture has been applied. Furthermore, it is the best method for the healing of ulcers and allows the patient to take sufficient nourishment very early.

Roepke performs postero-gastro-enterostomy in all cases in which the operation is done within forty-eight hours and which appear suitable in later cases he applies it only when distal stenosis is present or threatening. He does not use it when suppurative peritonitis is present.

Postero-gastro-enterostomy was done in thirteen of the nineteen cases reported. The one death occurred in a case in which cleansing of the gastro-intestinal tract was done only after an interval of seventy-two hours and there was severe stenosis. Of the six patients not treated by gastro-enterostomy two died after an interval of ninety-five and ninety-six hours respectively.

Subsequent examinations showed that eleven of the patients treated by gastro-enterostomy were entirely free from symptoms, whereas of the six not so treated, one required a second operation for ulcer. The after-treatment should consist of rest, dietetic treatment and the application of heat to the abdomen to obtain abdominal hyperemia and promote intestinal peristalsis. *Doerfler (Z)*

Schmidt, E. R. Forty Four Cases of Simple Perforation of Gastric and Duodenal Ulcers with Single Method of Surgical Treatment. *Acta Chirurg. Scand.* 1922, 1 314

The author states that the average mortality of simple perforating ulcers of the stomach and duodenum is between 1 and 40 per cent. He reports forty four cases operated upon during the years 1903-1921 by seven different surgeons using the same method. In no case was operation refused on account of the patient's poor general condition. The lesion develops most frequently between the twenty-first and fortieth years of age. In the author's series there were 1 patients under 2 years and fourteen over 40 years. Thirty-two of the patients were males. One duodenal ulcer was found in a female patient and nine occurred in male patients. Five of the forty four patients gave no ulcer history. The remainder had had ulcer symptoms for periods ranging from a few weeks to over twenty three years.

The mortality was 3.33 per cent in the cases operated upon twelve hours or less after perforation, and 37 per cent in those operated upon between twelve and thirty hours after perforation. While the time elapsing between the perforation and operation is very important with regard to the prognosis, the location of the ulcer and the patient's condition are also of great significance. The mortality increases directly with the distance of the perforation from the pylorus. If the ulcer is so situated that localization may occur the prognosis is better. Ulcers of long duration are more favorable for localizing because of neighboring adhesions. If the perforation occurs when the stomach is empty localization is more apt to occur than if the stomach were full.

There were no deaths in the ten cases of duodenal perforation. The perforation was closed by excising the ulcer and then suturing. When excision was impossible the ulcer was cauterized. A gastrostomy was then performed and the abdomen irrigated with normal saline solution at 40 degrees C. A drain was used in only five of the cases. When the patient was returned to his bed he was given proctoclynes, hypodermatoclynes, and sufficient morphine to relieve pain. As soon as he regained consciousness he was allowed to lie vichy after vichy and milk. The amount of fluid taken by mouth and the amount that ran out of the gastrostomy tube were recorded. A few days after the operation the gastrostomy tube was closed. If there was no nausea or vomiting by the end of a week, the tube was removed. An ulcer diet was given for some time after the operation. The average length of time the patients remained in the hospital was 33.39 days.

Of the forty-four patients operated upon, eleven died. The ulcer was excised in thirty-nine cases and sutured in four. In one, a Witzel fistula was made. A Mikulicz plastic was performed in one case, and gastrogastrostomy for hourglass constriction of the stomach in one. In a later study of these cases it was found that eleven of the twenty

four patients had had no further symptoms, three had mild symptoms, six had a recurrence and had undergone medical treatment, 10 had had recurrence necessitating operation, and two are dead.

The author draws the following conclusions:

Perforation may occur at any age, but occurs mainly occurs more often during the ulcer-bearing period.

The mortality depends for the most part on three factors: the time elapsing between the perforation and operation, the severity of the peritonitis, and the patient's general condition at the time of perforation. The mortality rates of the different series of cases reported will vary as these factors vary in the cases comprising the series.

3. Gastro-enterostomy is a superfluous procedure in the treatment of perforated ulcer. By employing gastrostomy instead the mortality rate can be reduced from 10 to 6.5 per cent.

4. The gastrostomy opening serves as a safety valve. Accommodation can be given through it even before the patient awakens from the anæsthesia. All the postoperative discomfort of eructation, belching, nausea and vomiting is eliminated. If lavage is necessary this is a simple procedure and not disagreeable to the patient.

5. Primary suture of the abdomen after thorough irrigation with normal salt solution at 40 degrees C. favors a smooth postoperative recovery.

6. Of twenty-five patients re-examined, only ten have required a second operation for recurrence of the ulcer.

7. When they leave the hospital, patients should be impressed with the fact that an ulcer diet is very essential for continued freedom from recurrence of ulcer and that it is highly desirable for them to remain under medical control for some time.

8. No cases of cancer of the stomach developed in the series of cases reviewed.

9. A high median incision has proved most satisfactory.

Excision of the ulcer removes pathologic tissue, allows approximation of the edges so that there is no protruding ulcerated surface on the inside, reduces the tension of the sutures, affords better hold for the sutures and leaves less scar tissue after healing.

Persons with ulcer should be warned of the possibility of recurrence of the ulcer and perforation.

J. A. H. MACCOL, M.D.

Cotter, E. C. and Smith, J. A. Lymphoblastoma of the Stomach; Report of Two Cases. *Surg. Clin. N. Am.* 1922, 2, 8, 105

The authors prefer the term lymphoblastoma of the stomach to lymphosarcoma and assert that the subdermatitis use of the term sarcoma has been the cause of much confusion. The disease is relatively rare. At the May Clinic there are eleven cases during the period from 1903 to 1920. A proportion of one lymphoblastoma to sixty eight gastric carcinomata. The lymphatic type is the

most common form of gastric sarcoma. Of Hagard's seventy-six cases of gastric sarcoma, thirty represented a tumor of lymph-cell origin. Six of the twelve cases at the Mayo Clinic were operable; two of the patients died from sepsis following operation, one died four months later with general recurrence, and two showed metastases five to seven months after the operation. Seven of the twelve cases were diagnosed before operation as carcinoma, one as ulcer, one as an abdominal tumor, probably inflammatory, one as gastric lesion, probably malignant, one as pyloric stenosis, and one as tumor in the upper abdomen, probably of the pancreas.

The differential diagnosis from cancer is practically impossible. The signs, symptoms, and gastric analysis are nearly the same. Hemorrhage and anemia are not so common as in cancer because the mucosa membrane more frequently remains intact. The tumor tends to project into the lumen without ulceration and its consequent X-ray filling defect. The history is shorter and the course more rapid than in cancer.

The authors report two cases of lymphoblastoma diagnosed as cancer.

**CASE 1:** The patient was a man 50 years of age, who, seven months previous to admission to the hospital, experienced a progressive loss of appetite until, during the last two months, almost no nourishment had been taken. Nausea and a slight cramp-like epigastric pain followed the ingestion of food and changing of the position in bed at night. The pain did not radiate. The patient became restless and lost sleep. His weight dropped from 35 to 20 lbs.

The patient was a poorly nourished man with canines teeth pyrexia, and foul breath. The abdomen was soft and symmetrical. A firm, slightly tender mass the size of an orange, which seemed to move with respiration, could be felt high in the left epigastrium. The hemoglobin was 75 per cent. There was absence of free hydrochloric acid, and the total gastric acidity was low. X-ray examination revealed a filling defect high up on the lesser curvature in the cardiac region of the stomach, which appeared displaced forward and to the left. The fixation and irregularity of the stomach suggested malignancy. At operation, the peritoneal cavity was found to contain a moderate amount of slightly turbid fluid. The stomach was distended with gas. A large mass just beneath the diaphragm overlying the aorta, pushed the cardiac end of the stomach toward the left, and infiltrated the lesser curvature. The regional lymph glands were enlarged. The condition was diagnosed as inoperable cancer. After the operation the patient had persistent hemorrhage and an irregular pulse. Death occurred eight hours after the operation. The pathologic diagnosis was gastric lymphoblastoma with metastases to the regional and retroperitoneal lymph glands and fat. The peritoneal fluid contained staphylococci and leucocytes.

**CASE 2:** This case was that of a man, aged 37 years, who gave a history of dull epigastric pain coming on about one half hour after meals for ten months. This pain gradually became more severe until, during the last five weeks, it had been a constant agony. The ingestion of meat aggravated the condition. The patient had lost 38 lbs. and was poorly nourished. Slight epigastric tenderness was found, but no palpable mass. The hemoglobin was 65 per cent and the red blood cells numbered 3,74,000. There was absence of free hydrochloric acid. The total gastric acidity was low. X-ray examination showed a definite annular constriction in the antrum. At operation the stomach appeared normal, but palpation revealed, 4 in. from the pylorus, a hard irregular mass which contracted the lumen until it scarcely admitted a finger tip. The regional lymph glands were enlarged. The gastric tumor, pylorus, and in of the duo denum were resected and postero-gastroenterostomy was done. Convalescence was complicated by bronchopneumonia. Twelve months after the operation the patient had gastric complaint, felt well, had worked for six months, weighed 33 lbs. and showed no abdominal masses or tenderness. The pathologic diagnosis was gastric lymphoblastoma. WALTER C. BUCKNER, M.D.

STARR, F. N. G. Cancer of the Stomach. *Canada Medical Association Journal*, 9, 3, 221, 24.

The author emphasizes the fact that pain is often a late symptom in cancer of the stomach. An examination for this condition should be made when a patient complains of discomfort in the epigastrium occurring at irregular intervals without relation to food intake and associated with loss of energy. This investigation should include a complete history, physical examination, an X-ray examination, and all laboratory tests.

In the five years from 1907 to 1912 inclusive the author operated on eight cases of cancer of the stomach. In only four was it possible to perform gastroenterostomy. No radical operations were done.

From 1911 to 1916 inclusive twenty-nine cases were operated upon. In thirteen (45 per cent) a palliative gastroenterostomy was possible. In five (17 per cent) resection of the stomach was done. One of the patients treated by gastrectomy died of pneumonia three years later; two are still living, and two cannot be traced.

From 1917 to 1921 inclusive thirty-nine cases of gastric cancer were treated. In twelve palliative gastroenterostomy was done, and in thirteen (33 per cent) radical operation. Of the patients subjected to radical operation four died (one of delayed shock two days later, one of acute dilatation ten days later, one of pneumonia eleven days later, and one of secondaries in the liver two years later); one is now dying of secondaries in the retroperitoneal glands and eight are living and well.

The author advocates exploring lat cases under local anesthesia after pre-operative con-



ending of the administration of 5 per cent sodium bicarbonate solution with 1 per cent glucose by Murphy drip and gastric lavage the night before and the morning of the operation. To flag the operation hypodermoclysis of normal saline should be given into the axilla. The extent of the operation will depend on the condition found.

J. A. H. Macer M.D.

Dahl Ivarsen F. Ulcerated Carcinoma and Carcinomatous Ulcer Stimulating Round Ulcer (Ultero-cancer et cancer ulteri stimulantis labele mede) *Acta med Scand* 9: 1, 34.

In two reported high malignancy are similar to cases of gastric ulcer. At operation one presented the picture of a typical gastric ulcer situated upon the lesser curvature and microscopically showed carcinomatous change. In the other case hard infiltrated carcinoma with ulcerated surface was found.

Lovén E. M. D.

Walker J. J. Postoperative Obstruction of the Small Intestine *Surg Gynecol* 5: 1, 9, 14.

Because of its present high mortality of about 30 per cent intestinal obstruction is much dreaded as any post-laparotomy complication. The treatment of small bowel has not progressed as has the treatment of other abdominal conditions.

The high mortality of obstruction of the small intestine is due largely to the non-recognition of the seriousness of symptoms. By the time the condition is hopeless, or the untoward onset of the condition following operation, while the patient is still under the eyes of the surgeon.

The author divides acute postoperative obstruction into three types that occur within a few days or weeks after operation and that coming on months or years after a laparotomy. The former occurs usually in patients with considerable infection, trauma or drainage and appears about the fifth day after operation. The latter is due to the exudate produced after operation.

Adhesions are located here trauma and infection have been greatest. This is usually in the ileum. Death is caused by the absorption of toxins.

The author is unable to describe one fairly typical syndrome or to differentiate other obscure abdominal conditions. In the differential diagnosis he relies upon the history especially as regards causative factors in the production of adhesions, and the development of the symptoms. In a case cited typical of acute postoperative obstruction the diagnosis rested on the salient features of (1) vomiting without known cause first of stomach contents, later of bile stained fluid and later of yellow contents of the upper intestinal tract which was uncontrolled by the retraction of fluids by mouth or gastric drainage and (2) a decrease in the amount of flatus following repeated enemata. Prolapse of the colon is usually absent except in the

presence of beginning peritonitis. The pulse gradually increases in rapidly and in the last cases becomes weak and irregular. The mortality varies from 5 to 30 per cent, depending upon the duration of the obstruction. Recovery resulted in 30 per cent of the cases operated upon within the first eight hours.

The thrust should be directed first to and the relief of the toxic condition with the least amount of shock. With recommended jejunostomy under local anesthesia, followed at a later date by operation for the relief of adhesion.

In the technique used by the author the incision is made in the midline of the upper left quadrant. The jejunum is located by the ligament of Treitz and the uppermost loop is grasped with the forceps. Two purse-string sutures are thrown around the forceps, an opening is made into the gut large enough to pass a 6 or 8 French self-retaining catheter and the purse-strings are tied. The catheter is then passed through a portion of the serosa which is dropped down and seal the gut beneath the catheter is removed. This is done by cutting off the bulbous end and allowing it to drop into the gut. The fistula usually heals within three weeks. In only one case of series of 12 cases eight as operation closure necessary.

The operation for the relief of the obstruction is undertaken after the toxic symptoms has subsided a rule which five days. When obstruction is caused by acute inflammation relief is usually obtained without further operative interference. In a series of sixteen cases in which jejunostomy as done for the relief of obstruction occurring within 14 to fourteen days after operation, recovery took place without further operative procedures. Jejunostomy is advocated as method which will lower the present high mortality rate of acute intestinal obstruction. WILLIAM E. SHARPLEY M.D.

Quain F. F. Chronic Duodenal Obstruction—Etiology, Symptoms, and Treatment. *N York M J & Med Rec* 9: 1, 631.

Chronic duodenal obstruction causes symptoms arising from mild epigastric distress to severe headache, vomiting, and eriglo. The condition is often confused with gastric ulcer, gall bladder disease and appendicitis.

The most common symptoms are chronic epigastric distress which varies in time and duration but is usually one two or three hours after eating, nausea, the vomiting of often large quantities of contents containing bile, constipation, periodical vertigo and headache. The symptoms disappear after copious bile emesis. The attacks are separated by periods of normal digestion. The patient may be confined to bed more often by the severe headache than by the nausea.

This obstruction of the duodenum may be due to several different causes, but the upright position is responsible indirectly. A short mesentery will prevent the down and gravitation of the stenosis.

The blood vessels are the chief support of the mesentery which, if short, must bear the entire weight of the intestines, this being the cause of the serious pathologic results.

The duodenojejunal juncture between the aorta and the superior mesenteric artery may cause constriction if the mesentery is short. An excess of fibrous tissue at this juncture causes further constriction.

A second cause of constriction is a mobile ascending colon with a mesentery largely supported by the colica media artery, which presses upon the third portion of the duodenum, causing obstruction and dilatation.

A short fetal mesentery will prevent the ascending colon and hepatic flexure from reaching their normal locations and thus cause colicostosis on the right side. In such cases both of the preceding factors may constrict the duodenum.

Since these conditions are congenital, the symptoms usually date from early childhood.

A positive diagnosis can be made with the X-ray by turning the patient sideways. Bulging or displacement of the duodenum may be associated with barium residue or delayed emptying.

In mild cases, recumbent position after meals, or elevation of the lower abdomen in the knee-chest or the Trendelenburg position will often allow the duodenal muscles to regain their tone.

In more advanced cases non-operative treatment includes rest in bed for a few weeks, the Trendelenburg position for several hours each day and the application of heat over the lower abdomen.

If surgery is advisable all the upper abdominal organs should be thoroughly examined at the time of the operation. Pious of the right colon will usually be relieved by fixation. If dilatation extends to the jejunal juncture, duodenojejunostomy is the best treatment. Care must be taken not to injure the blood vessels or lymph glands. A description of the operation follows.

The author has been able to cure or relieve nearly 50 per cent of these cases.

MARION H. HOBART, M.D.

Macrae, D. J. Chronic Duodenal and Gastric Ulcer Diagnosis. *J. Lawt.* 9:3 Jan., 26.

The technique of operation for chronic duodenal and gastric ulcer is a matter of choice and should be decided upon after the abdomen is opened. Moyman has said that of every ten cases of ulcero-pyloric results after gastro-enterostomy nine are due to the fact that the operation, as performed in the absence of any organic lesion to justify it.

The two conditions should not be discussed as one subject since the pathology, symptoms, and treatment are distinct. The pyloric white line and pyloric vein may be taken as the anatomical base of demarcation.

Gastric ulcer is a rare disease as compared with duodenal ulcer. Persons with gastric ulcer are usually emaciated, weak, and pale. The ulcer

varies greatly in appearance and sensation. In some cases it perforates the liver and pancreas. It is subject to cancerous degeneration, causes severe pain soon after eating, and calls for gastro-enterostomy combined with excision and cauterization of the ulcer.

Duodenal ulcer on the other hand, is a common lesion and in many cases causes only mild symptoms. It varies little in size and appearance, and its symptoms commonly resemble those of other abdominal affections. Its pain is delayed. The treatment of choice is gastro-enterostomy without excision.

In cases of gastric ulcer the pain is typically regular shortly after the ingestion of food. In cases of duodenal ulcer there is a feeling of fullness and discomfort. Tenderness is not usually characteristic but a deep pain in the epigastrium boring through to the back suggests a lesion on the posterior surface. The sequence, food—comfort—pain—food—comfort—pain, is of the greatest importance in the diagnosis of gastric ulcer.

Vomiting is not an important diagnostic symptom except in marked tenesmus, and is given too much prominence in the textbooks.

Hemorrhage is also given too much prominence in the literature. Blood is found in the stool or vomitus in less than 50 per cent of the cases of gastric ulcer. On the other hand it is one of the first and most important signs of carcinoma of the liver and has been the cause of many operations for supposed gastric ulcer.

When the history has been taken carefully little can be gained by a physical examination. The examination of the stomach contents should be discarded. Exploratory operation with examination of the ulcer is, of course, the only sure means of detecting the condition. The X-ray is of great value but should not be given too much importance.

The cause of ulcer is usually infection from other parts. Ninety per cent of cases of so-called dyspepsia or other stomach troubles diagnosed as ulcer without the X-ray or surgery are not cases of ulcer. The two chief offenders are the appendix and gall bladder.

The pyloric valve has been mistaken by some inexperienced operators for ulcer. The white line was so diagnosed in a case in which uteropy proved the absence of ulcer.

The author states that an operation for ulcer should never be performed unless the ulcer can be seen and felt. All chronic ulcers should be removed if possible.

MARION H. HOBART, M.D.

Bettman, R. B. and Blinn, D. M. Acute Intestinal Obstruction Caused by Fecal Impaction in Meckel Diverticulum. *J. Am. M. Ass.* 9:13 Jan., 26.

The case reported, that of a boy 7 years of age, is of interest because of the rarity of the pathologic condition. Eight inches above the ileocecal valve Meckel diverticulum protruded from the ante-

mesenteric border of the intest. Gentle pressure on the diverticulum caused the intestinal contents to slip into the collapsed ileum followed by gas and fluid causing a gurgling sound. The contents could be milked along the ileum into the large intestine. An attempt was made to obliterate the diverticulum. Recovery was uneventful. Later the diverticulum could not be seen by the X rays.

F. C. ROEMER, M.D.

McFarlan P. F. Intestinal Obstruction Following Acute Appendicitis and Peritonitis. *New M. J.* 9:318

The case reported was that of a 20-year-old man who was operated upon for acute appendicitis thirty hours after the acute onset of fever, generalized tenderness over the entire lower abdomen, and marked rigidity. There was no history of previous attacks. At operation a gangrenous appendix was removed and found to contain no concretions. The pouch of Douglas contained considerable quantity of pus, and there was marked infection of all the peritoneal surfaces. Much came out. A corrugated rubber drain was introduced into the pouch of Douglas.

The postoperative management included the administration of glucose and saline solution per rectum and of morphine on the first night. The temperature was normal the following morning and never rose above 100 degrees F. The pulse was normal on the fifth day. From the second night the patient complained of intermittent pain and desire to move his bowels. He also showed slight distention. On the evening of the third day he was given a small turpentine enema, and on the fourth day castor oil and another turpentine enema. The bowels moved slightly that night and three times the next day aided by gr of calomel hourly up to 2 gr and another enema. The distention increased constantly however and the discomfort continued. There was no vomiting. On the seventh and eighth days there were several small liquid movements. The distention had increased to such an extent that it stretched and opened the incision.

On the ninth day the abdomen was opened. The small intestine was found distended above, dense adhesion, which bound it firmly to the mesentery of the pelvic colon. Following this operation there was distention of the stomach but this was relieved rapidly by gastric lavage. Thirty hours after the operation the patient was given pituitrin, and enema, and castor oil by the stomach tube. The next day he had copious liquid evacuation and for day or two he was relieved but then became much worse. Fifteen days after the first operation the incision was opened and a tube placed therein. This relieved the distention and the bowels moved freely 10 days later.

Slow recovery followed. By the end of the sixth week the patient left the hospital with the wounds healed but with hernia at the site of the appendix incision. H. W. FROX, M.D.

Quinlan A. Case of Cystic Appendicitis (Cystic diverticulum of appendix). *Bull. et mem. Soc. de chir. de Par.* 9:2, 1911, 1199.

Cases of cystic appendicitis are rare. The author reports one case of his own.

The lesion are of 2 principal types. Those of the first type, which may be called mucocoeles, are due essentially to hypertrophy of the lymphoid tissue of the appendix the elements of which are distended by mucus. Those of the second type include diverticular cysts. Under the influence of inflammation and repair secondary cavities with debris of the mucosa of the primary cavity are formed. In the majority of cases there is a communication between the cavities of the cyst and the appendix. The diverticular cysts seem to be due to small peritoneal abscesses opening into the lumen of the appendix, which heal after suppuration, the regenerated epithelium of the internal surface of the appendix then extending into the adjacent sac by metaplasia.

The author's case was different from either of these usual types (mucocoele and diverticulum). Histologic examination showed atrophic appendicitis of the hyperemic type, chronic sclerotic lesion and traces of old strict inflammation. In addition to these signs of ordinary appendicitis, a solitary circumscribed diverticulum at the base and several subserous cystic formations were found. The diverticular cyst was in the vicinity of the base.

Whatever may have been the pathogenesis of this outlying diverticular cyst, the appendicular cystic formations (of which there were four) are completely independent of the atrophic diverticulum, lack epithelium, and because of their evident vascular origin and blood content constituted a distinct type of lesion. W. A. BARN.

Phifer C. H. Hemorrhage Following Abdominal Operations; with Special Reference to Appendectomy and Excluding Bleeding from the Stump. *Surg. Gynec. & Obst.* 9:3, 1911, 40.

Lalack found that enterorrhagia occurred once in every hundred operations for strangulated hernia. Postoperative hemorrhages after abdominal operations are rare. It may follow operations on the peritoneum, omentum, intestine, gall bladder, uterus, ovaries, and cranial vessels from the second to the tenth day. The author reports the case of a young girl subjected to appendectomy for subacute appendicitis, who developed symptoms of hemorrhage and passed blood by the bowels on the second day. At the operation a second laparotomy was then done. The appendix stump was found to be in good condition. The bleeding came from the fifth day following the usual treatment for hemorrhage. The author opinion the hemorrhage in this case was due to thrombosis and embolism of the walls of the intestine followed by ulceration.

Phifer collected from the literature forty-three cases of postoperative hemorrhage following abdominal operations. There were twenty-one recoveries and twenty-one deaths. In one case report the

result is not stated. In five cases, in which there was one death, the bleeding was from the bowel. In seven, in which there were two deaths, it occurred from the wound and in twenty-six cases, in which there were seventeen deaths, it occurred from the stomach. In three case reports the nature of the hemorrhage is not stated. In four instances ulcers were found in the stomach or duodenum.

Direct hemorrhage following appendectomy may occur from the superficial abdominal vessels, the meso appendix, the bowel, the abscess cavity, the deep epigastric and external iliac arteries, or the appendix stump.

Moyman states that postoperative hematoma is to be looked for especially after operations on the stomach, duodenum and bile passages. As responsible factors he mentions (1) the anesthetic (2) injury to the stomach, bowel resulting in ulceration (3) injury to the omentum causing thrombosis of the omentum followed by embolism in the walls of the stomach or bowel (von Eiselsberg) (4) asper (Rodman) and (5) reflex influence (Mayo Robson).

The author regards trauma and embolism alone or combined as the cause of this condition.

J. A. H. MAOON, M.D.

Oudard and Joss. Inguinal Hernia on the Right Side Following Appendectomy (Hernies inguinales droites après appendicectomie). *J. de chir.* 9, 2, 27, 384.

The authors report nine cases of inguinal hernia on the right side, which occurred in adult males following appendectomy. The average time between the operation and the development of the hernia is thirteen months. The content of the hernial sac was chronically inflamed omentum. The sac was very thin and the omentum firmly attached by dense adhesions. The abdominal wall was thinned and weakened and the external abdominal ring enlarged. An impulse upon coughing was noted.

The adhesions of the omentum to the peritoneal wall no doubt occurred at the time of the attack of appendicitis or immediately after the operation and constituted probably the primary pathogenic factor in the development of the hernia. Direct injury to the muscles or the nerve supply of the muscles of the anterior abdominal wall caused the necessary weakening of resistance.

Clinically these herniae resemble the ordinary inguinal hernia, but the sac differs materially from that found in cases of congenital failure of the processus vaginalis to close completely. As a rule herniotomy is necessary. LOTAL E. D. VAN M.D.

Bonnet. Residual Abscesses Opening into the Bladder by the Subperitoneal Route After the Removal of the Appendix (De l'ouverture dans la vessie par voie sous-péritonéale des abcès appendiculaires résiduels, après ablation de l'appendice). *Lyon chir.* 9, 114, 35.

Bonnet patient, man 40 years of age, was operated upon for gangrenous appendicitis. Three

weeks after the removal of the appendix a subperitoneal perirectal abscess developed to the left of the rectum and drained into the bladder.

Subperitoneal pelvic phlegmons in appendicitis are rare. Abscesses in the space of Retzius are more common; these also may open into the bladder.

In the case reported the gangrenous appendicitis caused peritonitis. A drain was placed in the Douglas sac and brought out at the lower end of the wound. During the days following, gangren of the aponeurosis developed and some of the infecting fluid from the peritoneum infiltrated the musculature. It is possible that the peritoneal fluid may have filtered into the lower pelvis between the peritoneum and the muscle planes. Bonnet therefore recommends the use of a peritoneal drain and suturing of the lips of the peritoneum to the aponeurotic planes to prevent infiltration of the subperitoneal cellular tissue. W. A. BERRY.

Trueblood, D. V. End-to-End Intestinal Anastomosis. An Experimental Study. *Archives Med.* 9, 3, 221, 7.

The operation described, which is still in its experimental stage, is applicable to the large and small bowels for end to end or end to side anastomosis. The diseased bowel is resected by means of small clamps and cauterized. The two ends are approximated and the cauterized edges turned up so that continuous Cushing mattress suture can be introduced as close to the clamps as possible. This loose continuous suture is then pulled taut to approximate the serous surfaces of the posterior face of the anastomosis and then locked by taking an extra bite through the two approximated edges.

When an intestine is crushed by the crushing clamp the mucosa and smooth muscle tissue squeeze out from under the clamp, leaving the serosa and submucosa of the two walls pressed together into fibrous ribbon. When the clamps are removed these two ribbons stand up stiffly side by side. Both ends of the ribbons are caught in small hemostats and the ribbons held taut while one or more basting stitches are introduced.

The continuous Cushing mattress suture is continued around the bowel and the two ends are tied. The basting threads are then withdrawn. For reinforcement, especially at the mesenteric edge, *Habed* mattress sutures are introduced and continued all the way round where necessary. The rent in the mesentery is then closed. By grasping on each side of the anastomosis with the thumb and forefinger the approximated lips are separated and the size of the lumen may be determined. The tissue held in the two small hemostats is cauterized away from the crushing clamp. The ribbon held within this clamp is united to that opposite.

The following conclusions are drawn:

1. The procedure described is a simple aseptic method of anastomosis in which the openings are closed by basting threads which after the anastomosis has been completed, are withdrawn.

It is applicable to the large and small intestine for almost any type of union in any location.

GABRIEL E. BELL, M.D.

Symmonds, C.: Gonorrheal Stricture of the Rectum.  
*Proc Roy Soc Med Lond* 93 xvi, Sect Surg 3

The type of structure to which Symmonds refers involves the lower 3 or 4 in. of the rectum including the anal margin and the entire circumference of the bowel. The bowel shows bands and bridges of indurated muscle separated by pockets, from the bottom of which fistulous tracts lead into the vagina or to the surface around the anus. Extreme narrowing occurs at several points and in advanced cases will not permit digital examination. Hard polypoid growths are found surrounding the anal margin. The patient states that a discharge from the rectum has persisted for many years.

The author reports seven cases, all those of women. In 4 cases colostomy was followed by symptoms of toxic absorption and death. In one case following a digital examination, there was profuse diarrhea with blood and pus followed by collapse and death. In another case death occurred after the removal of the polypoid masses. In 2 cases the removal of the cicatricial areas was undertaken some time after colostomy. In one the results were successful but in the other it was impossible to reach healthy bowel. One case was relieved by colostomy.

The author was able to find specimens of thirty-eight other cases in museums. Many of these are aneurysmal specimens of the venous origin.



Fig. Gonorrheal stricture of rectum in male.

In the treatment of this condition various procedures may be employed to meet certain indications. The use of bougies and division of the stricture is limited because of the danger of perforation. Excision can be done only when the limits of the disease can be reached with the examining finger. Colostomy occupies a prominent place in the treatment. Castration and appendectomy may be advisable in selected cases. J. E. ROBINSON, M.D.

#### LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

Jones, J. F. K.: The Removal of a Retention Cyst from the Liver. *Ann Surg* 923, xxvii, 68

Non-parasitic liver cysts may be classified as:

1. Teratomatous or embryomatous cysts.

2. Pseudocysts, including cystic degeneration of carcinoma and sarcoma, softening of cirrhotic nodes, and cysts due to hemorrhage.

3. Lymphatic cysts which contain clear watery, yellowish fluid, thin albumen, large percentage of sodium chloride and no bile, are usually small, and are lined with endothelium.

4. Cystic degeneration of the liver associated with cystic kidneys, and also occasionally with cysts in the spleen, pancreas, or ovary. The cysts vary from microscopic to macroscopic size and are lined with epithelium ranging from low to columnar type. The dilated tubule is surrounded by fibrous tissue. The fluid is clear, albuminous, and free from bile and may show cholesterol, leucocytes, blood, and crusts.

5. Cysts which arise from blood vessels.



Fig. Gonorrheal stricture of rectum in female.

6. Single or multiple cystadenomata which are lined with epithelium and contain clear or turbid albuminous, variously colored fluid.

7. Simple ciliated epithelial cysts, which are no larger than walnut, free from bile and located on the anterior surface of the liver near the suspensory ligament and along the inferior border.

8. Retention cysts, which are due to the engorgement of a bile duct and contain serous or mucous fluid or bile.

A non-parasitic cyst is usually lined with epithelium or endothelium.

A parasitic cyst may be ruled out by microscopic examination of the fluid and cyst wall. The fluid of a cyst containing a living hydatid is colorless; it contains serous fluid, and sugar, but no albumin. In some cases there may be booklets, scolices, or daughter cysts. When the hydatid is dead the fluid becomes turbid, albuminous, and toxic. A hydatid cyst shows an outer capsule, the ectocyst, and an inner membrane, the endocyst, which, with its daughter cysts, may be readily shelled out. The value of hydatid thrill in the differential diagnosis is very questionable. The various laboratory tests for hydatid disease—Roostaginn, Abderhalden, and intradermic reactions, the complement-fixation, and cutaneous tests may be positive.

The diagnosis of non-parasitic liver cyst is seldom made before operation or autopsy. Such cysts are mistaken for hydatid or ovarian cysts, hydrocephalus, mesenteric cysts, parasitic cysts, tuberculous peritonitis, distended gall-bladder, sessile tumor of the liver, etc. Occasionally the very small relation of the cyst to the liver shadow or rule out the thoracic condition. It is important to differentiate the extrahepatic bile duct cysts, such as a diverticulum or choledochal dilatation of the common bile duct, which should be treated by primary choledochal-enterostomy.

Complications, such as rupture, hemorrhage, and suppuration, are rare.

The treatment for both parasitic and non-parasitic cysts is similar. After the interior of the cyst has been disinfected and the cyst lining destroyed by chemical means, and, in cases of hydatid disease, the endocyst has been removed, the sac is stitched to the abdominal wall (marsupialization). The cyst may be drained or the abdominal wound closed without drainage. Occasionally an encapsulated cyst may be completely excised. In non-encapsulated cysts, because of the difficulty of approach and hemorrhage, very thin capsule excision of the sac is inadvisable. A pedicled cyst may be completely removed. If a non-parasitic cyst cannot be extirpated or marsupialized, the cyst wall may be anastomosed to the duodenum.

The author gives brief report of sixty-one cases of non-parasitic liver cysts operated upon surgically which have been reported in the literature, and includes one case of his own.

The author's patient was a 17-year-old girl with an oval abdominal swelling which projected in the

midline extended  $1\frac{1}{2}$  in below the umbilicus, and above seemed lost under the transverse colon. The cyst could be moved only from side to side. The abdominal wall was movable over it. The liver was not palpable. Local pain was felt in the swelling. There was no jaundice.

At operation a grayish white ovoid cyst measuring 10 by 10 cm. which was attached to the anterior margin of the left lobe of the liver was completely excised. The raw liver edge was then cauterized and sutured with catgut. The patient made complete recovery.

The dark, greenish viscous fluid contained by the cyst was negative on microscopic examination and sterile on bacteriological examination. The cyst wall consisted of a thin layer of dense fibrous tissue lined by a single layer of low cuboidal epithelium which was partially desquamated. An occasional duct-like formation was found embedded in the cyst wall. The diagnosis was retention cyst of the liver.

WALTER C. BURKET, M.D.

Hilvestine, F., Jr. Primary Carcinoma of the Liver. *J. Cancer Research*, 923 vii, 309.

The author considers the following questions: (1) whether the cancer is derived from the liver cells or from cells of the smaller bile ducts; (2) whether there is any relationship between the malignant growth and cirrhosis; (3) whether the growth takes place by gradual metamorphosis of liver cells into cancer cells, or by antecellular proliferation; and (4) whether the cancer is multicentric or uncentric in origin. Two cases are reported.

Because of the trabecular arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile-duct epithelium, the carcinoma in the first case was classified a hepatoma.

Cirrhosis was not present in the liver tissue, and there was no hyperplasia of the liver cells. In spots of numerous points at which the cancer cells grew between parallel capillaries and were in direct continuity with the liver-cell trabeculae, there were no transitions between liver cells and cancer cells.

The growth was uncentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension without using the portal system as a pathway.

The picture in the second case, case of secondary carcinoma of the liver was very similar to that observed in the first case. H. A. M. KASNET, M.D.

Boyd W. Studies in Gall-Bladder Pathology. *Brit. J. Surg.* 923 x, 237.

Boyd states that in the past too much attention has been paid to the study of calculi and not enough to the study of the gall bladder itself. The investigation of the pathology of the gall bladder was carried out on material freshly brought from the operating room. The best results were obtained from study of frozen sections after fixation in formalin and subsequent study of paraffin sec-

tion. A toxy material was found to be entirely useless even when the tissue was studied as early as three hours after death.

By means of the dissecting microscope it was found that in marked cases of strawberry gall bladder the graceful, fragile, gossamer folds of mucosa are completely altered in appearance being loaded down by the dense opaque lipid much as a delicate birch tree might be weighed down by a load of snow. This yellow lipid material in the strawberry gall bladder is soluble in alcohol, ether and chloroform and is less red with Scharrlach R and Sodal III and black with osmic acid. To determine the nature of the lipid material more accurately sections are stained by Lorrain Smith Nil blue aliphatic method. The conclusion was reached that the lipid in the mucosa was not neutral fat but whether it consisted of fatty acids or cholesterol was undecided.

Under the polarizing microscope newly formed crystals of cholesterol were found similar in appearance to the lipid material of the strawberry gall bladder. By using Mollenhuth aliphatic acid reaction for cholesterol, it was found that the lipids give the chemical and physical reactions of cholesterol ester. To determine the amount of lipid in the gall bladder mucosa equal parts of absolute alcohol and ether are used in a hot extractor. The mucosa of 10 normal gall bladders contained 31 and 70 per cent of cholesterol by weight. The percentage of cholesterol by weight in strawberry gall bladders varied between 24.60 and 60.34 per cent; the average being 47.46 per cent.

The lipid deposit may be local distributed in any of the coats and to any depth. Its most common place of occurrence is the surface epithelium and the stroma of the villi.

Boyd et al. state that the deposition of lipid has been produced experimentally in an animal. It will be impossible to state with certainty the factors which govern the formation of such deposits. He believes that the most probable factor is inflammation.

To determine the character and distribution of the lipid from the standpoint of comparative anatomy the gall bladders of fifteen dogs and five cats were examined. In dogs the lipid as present in the mucosa in one case but also confined to the epithelium in the furthest deposits being in the tips of the villi. In the cats the lipid as present in scanty amount in the surface and absent in three. No lipid as found in the gall bladder of the cow rabbit guinea pig, or frog.

In order to determine the function of the gall bladder the abdomen of a dog was opened a fine needle introduced into the gall bladder and after withdrawal of the bile an equal amount of 1 per cent iron ammonium citrate was injected. A series of dogs was used and after varying periods of time the gall bladder was removed and placed in fixative containing potassium ferrocyanide. Even after so short a time as half an hour there were

numerous blue granules in the epithelial cells and to a less extent in the stroma of the villi.

A study of cholesterol absorption was inconclusive. W. E. SAUNDERS, M.D.

**Bottomley J. T. Cholelithiasis; Cholecystectomy; Operative Injury to the Main Bile Duct; Primary End-to-End Suture; Postoperative Stricture of the Duct; Hepaticoduodenostomy; Recurrence of the Stricture; Second Hepaticoduodenostomy Over Rubber Tube.** *Surg. Clin. N. Am.* 9: 1-90.

A woman 40 years of age was operated upon September 1, 1920 for stones in the gall bladder and cystic duct. A hemostat was placed on the cystic duct and then retracted at a deeper level. The cystic duct was apparently free from the common duct. Removal of the gall bladder was followed by crush of bile, and it was then noted that a portion of the common duct was included in the forceps. An end-to-end suture was done over a T-tube. Three weeks later the tube was removed, and five weeks after operation the fistula closed. Subsequently the patient became jaundiced, and one year after the first operation hepaticoduodenostomy was done. Six months later jaundice again developed, and on May 1, 1922, second hepaticoduodenostomy was performed. Since then the patient has been well.

This case illustrates the danger and consequences of operative injury of the main bile duct in procedures about the region of the gall bladder even in the hands of those accustomed to dealing with the difficulties and experienced in meeting the problems of surgery in this field. As these are the days of frequent cholecystectomies, such a case is worthy of note and comment because it sounds a warning and teaches a valuable lesson on operative repair of the injury done.

It is desirable that every attempt, successful or unsuccessful, to repair or reconstruct the main bile duct be recorded. It is probable that many cases have not been reported because the original surgeon felt it was "the operator's" and the attempt to repair the result was unsuccessful.

Oscar E. Keadar, M.D.

**Koyen, A. B. Cholelithiasis, Cholecystitis, and Cholangitis.** *J. Surg. & Gynec.* 5.

Intrahepatic stones are seldom seen in autopsy. The distance of the liver from intestinal infection and the almost continuous flow of bile rendering them less common than stones in the gall bladder.

Duct stones do not form in the ducts. Hepatic duct stones are probably always due to an intrahepatic source. Cystic duct and common duct stones are usually derived from the gall bladder or in rare cases, from an intrahepatic source.

Stones in the gall bladder generally arise there but may be intrahepatic in origin. Their size varies from that of millet seed to that of small hen's egg. Their number ranges from one to 7,000 and their color from alabaster white light or dark.

yellow, green, brown or black. Their shape may be spherical, oval or faceted. They consist of layers of cholesterol and bile pigment or calcium carbonate, or combination of all three. They are rare in infancy and childhood and in tropical climates. Their greatest frequency is after the fortieth year of age.

Factors in the production of stones are (1) slowing of the bile due chiefly to narrowing of the duct, (2) ascending infection, and (3) excess cholesterol in the bile.

The gall bladder usually contains dark green, almost black, bile or pus.

Conditions favoring the formation of gall stones are (1) external pressure by constrictors, belts, etc. which causes kinking of the cystic duct and stagnation of the bile (2) ptosis causing kinks and bile stagnation, causes kinking and engorgement (3) catarrhal gastroenteritis (4) papillitis of ascending common duct infection (5) chronic circulatory, cardiac, and pulmonary disturbances causing venous engorgement (6) hurried irregular meals, over eating and drinking, poorly cooked food, sedentary habits, poor hygienic surroundings and (7) certain acute and subacute infections, such as typhoid fever, gastro-enteritis and its sequelae and catarrhal inflammation of the duodenum with ascending duct infection.

The hypertrophied walls of recovered gall bladder containing bile mucus and small stones may contract and completely empty.

Stones may remain in the gall bladder and ducts for years without causing symptoms, and may be found only by chance at laparotomy or autopsy.

In passing through inflammatory infiltrated ducts very small stones may cause violent pain. A small stone impacted in the cystic duct may cause colic. Various gastro-intestinal, renal, ureteral, pancreatic, and other intra-abdominal conditions may be mistaken for gall stone colic. The first pain may be due to pericholecystitis or a true peritonitis from extending infection or perforating ulcer. Violent contractions of catarrhal hypertrophied gall bladder may cause bladder distention.

Stones may wander in common duct stenosis with gall bladder hypertrophy and in catarrhal endocholecystitis, in which there is large bile secretion. In some cases they may pass through fistulae between the gall bladder and neighboring viscera. They usually do not wander from dilated uncompensated gall bladder or in cases with little bile and marked concentric hypertrophy of the gall bladder. Extremely large stones do not wander. Impacted stones may lead to intraperitoneal rupture of the gall bladder or ducts.

The surgical procedure is based on the interpretation of macroscopic changes found at operation, viz.

The appearance of the adjacent peritoneum with regard to inflammation, exudate and adhesions.

1. Simple acute dilatation of the normal gall bladder by fresh bile. This generally indicates sudden,

recent acute stenosis or trauma of the common duct with normally open cystic and hepatic ducts.

2. Eccentric hypertrophy of the gall bladder wall. This indicates open cystic and hepatic ducts and moderate common duct stenosis for a period of some time.

3. Icterus in gall bladder cases. This means obstruction of the common duct with incompenetration of the gall bladder.

4. Reversal of the bile stream and ascending cholangitis. This occurs when there is hypertrophy of an infected gall bladder with common duct obstruction.

5. Simple atrophy of the gall-bladder. This points to an early catarrhal condition with narrowing of the cystic duct.

6. Concentric hypertrophy a change which occurs in long standing moderate stenosis of the common duct.

7. The condition of the liver. This is determined by inspection and palpation, and if necessary by aspiration, smears, and cultures.

8. The contents and the character of the wall of the gall bladder.

Hydrops cystidis usually results from simple cystic duct obstruction due to stone or low-grade inflammation. Empyema of the gall bladder arises from acute ascending inflammation.

With ascending common-duct infection there may be concomitant, ascending pancreatic duct infection. A case of chronic pancreatitis may recover after drainage of the gall bladder.

Drainage is more often indicated for a cholangitic liver and for the pancreas than for the gall bladder itself. Hepatic, pancreatic, and gastric symptoms clear up following drainage.

Cholecystectomy should be done with great hesitancy. Especially when there is stenosis of the common duct, it allows the bile to drain only poorly through the already diseased bile ducts. The removal of a badly infected empyemic gall bladder may spread the infection.

The author describes the technique of cholecystostomy as follows:

Expose the common duct wall off the gall bladder with hot wet pads aspirate open at the apex remove all the bile mucus, pus, and stones from the gall bladder and cystic duct explore the interior of the gall bladder with the finger for stones and diverticula pack the gall bladder.

Then 3/4 in. of the top with iodiform gauze and extend the end of the gauze out through rubber tube drawn fastened into the gall bladder with a double penetrating suture suture the gall bladder to the anterior parietal peritoneum and close the abdominal wound around the tube.

A permanent fistula will not result. Reformed stones can be easily removed through the anchored gall bladder. Do not drop the gall-bladder and tube back into the abdominal cavity as this permits an overflow of bile and results in adhesions which may complicate later operative treatment.



Cholangitic infections may ascend from catarrhal common duct, cystic duct and gall bladder infection, possibly with the formation of multiple intra-hepatic foci or abscesses. In some cases they may cause death. The author gives the histories of five such cases of cholangitis.

By THEO C. H. BRET, M.D.

Oliver, F. F. The Etiology of Gall-Stones. *J. Lab. & Clin. Med.* 9:3, 1914.

It has been noted that gall-stones are more common in women than in men. According to one investigator, infection and stagnation of bile are the probable steps in gall-stone formation, and absorption of alkaline substances taking place with the production of an acid bile which leads to catarrh with an outpouring of mucus in such pigment and salt are precipitated stones may be found in any point in the biliary passages. The author states that he has never encountered an acid bile and that if this explanation is correct, could find gall-stones composed largely of bile salts. In the cases of gall-tubes reported in this article cystic duct obstruction was usually present and in few cases there was no common-duct obstruction with jaundice.

The urine was examined prior to examination of the urine and bile examined daily for fourteen to sixteen days after operation. All of the cases showed an increase in bile salt and pigment in the urine before operation. In some cases there was an enormous increase in bile salts above the normal coloring matter of the bile. In other cases the pigment predominated in the excretion of bile salt.

At operation the bile in each case was aseptically collected and tested for its various constituents. Quantitative determinations of the bile salt were made by treating the bile with about 1% alcohol and then filtering it. In cases of bile salts the bile-salt content was found to range from 1% of 1 per cent to 1 1/2 of 1 per cent. Cases of catarrhal bile cystitis relatively few in number were seen by the author in which the bile salt content of the bile was low. These were treated as potential gall-stone cases and responded well to cholecystostomy.

Following operation the bile and urine were daily collected and tested. After drainage of the gall bladder and the removal of the stones, the urine tended to show a decrease in bile salt and the bile showed corresponding increases. The removal of the obstruction did not lead to an immediate return to normal function on the part of the liver. In some cases normal limits were reached by the urine in six to eight days and by the bile in ten to fourteen days. About the fourth day after operation and for several days thereafter there was an increase in the urea content of the urine and decrease in its bile-salt content. Particularly noted by the author was the fact that the urine secretion seemed to run almost parallel with the secretion of bile.

By the findings reported herein it is plainly indicated that in such cases the bile salt content of the blood is increased. An increased content of cholesterol in the blood, together with decrease in the bile salt content of the bile, is one of the formation of gall-stones. Bile obtained at operation from cases of gall-stones, after its sugar being examined chemically was placed in test tubes sealed and allowed to stand for varying periods of time. Normal bile was also studied. The specimens of bile which were deficient in bile salt showed a deposit of cholesterol in the bottom of the tube. Normal bile remained free from cholesterol deposits.

From these observations it appears to the author that in cases of gall-stones and obstructive jaundice there are disturbances in bile salt secretion and excretion manifested by increase in bile salts in the urine and blood and decrease in the bile-salt content of the bile. As a result of the deficiency in the bile-salt content of the bile, cholesterol tends to settle out of solution. If the condition is not remedied early, gall-stones form, the end result of the physico-chemical disturbance. Therefore cases of this character should be treated to restore the bile urine and blood to their normal physico-chemical state.

Garnett E. Bennett, M.D.

Gabry, H. The Gall Bladder Surgically Considered. *N. York M. J. & Med. Rec.* 9:3, 1914.

Gall-stones are found in 10 per cent of autopsies on adults but in 95 per cent of these cases they had caused no symptoms. The most constant symptom is pain in the gall bladder region.

The X-ray is often a source of error. A positive finding in 40 per cent of the cases is high. The duodenal tube and bucket are of great assistance for aspiration and in the X-ray examination. Chemical examination of the blood is of value. A high cholesterol content may indicate stones. Palpation is important as it reveals rigidity and tenderness. A carefully taken history is essential.

The author discusses the pathology in detail and gives cases illustrating the different types. Inflammation may be present in cases of stones, but more often is present. The gall bladder may be distended below the umbilicus. In hydrodrops no bile is present. The gall bladder may be so shrunken that it cannot be found. Adhesions uniting the gall bladder to the surrounding organs may cause severe symptoms. Cancer is usually secondary. If it is primary, gall-stones are associated with it. Gall-stones may rupture into any of the surrounding organs. Pykphelia is usually fatal. These cases occur in 1%.

Leucopenia of about 4,000 and high fever is a direct contraindication to operation.

The majority of cases with indolent symptoms and all postoperative cases are medical cases. Cholecystitis is the most common indication for operation.

Hemorrhage and shock are not unusual in complicated cases. Stones may recur. Infection of the wound may cause postoperative peritonitis but this can be easily remedied by operation.

Gall bladder conditions may be associated with other pathologic conditions, such as appendicitis and fibromyoma. The attacks of colic are frequently aggravated by pregnancy and may disappear at term. A cholecystectomy may be done without interrupting the pregnancy. Jaundice is as often due to a surgical as a medical condition.

In uncomplicated cases the prognosis is as good as that of appendicitis.

In conclusion the author states that when the diagnosis of gall stones is established operation should be performed early to prevent serious complications.

MARCUS ROBERT M.D.

Waisel Wiesentreu, F. Primary Closure of the Abdominal Wall in Operations on the Biliary Ducts, with Special Consideration of Simultaneous Operations on the Stomach and Duodenum (Ueber den primären Bauchdeckenverschluss bei den Operationen an den Gallenwegen unter besonderer Berücksichtigung gleichzeitiger Eingriffe am Magen und Zwölffingerdarm) *Arch f. kl. Chir.* 1912, vol. 347.

The usual technique for cholecystectomy and drainage of the common bile duct as practiced in von Eschelsberg's clinic is described. The author warns against the use of needle ligatures in the region of the cystic artery in one case in which these were used an injury of the right branch of the hepatic artery was overlooked and led to fatal secondary hemorrhage. The suturing of flap of fat into the bed of incised liver is found of value. A drain is always introduced next to the strip of gauze laid over the stump of the cystic duct or next to the drain of the common bile duct.

During the last two years, operation was performed in 143 cases of disease of the biliary region. In 79 cholecystectomy was done alone, and in seventeen there were simultaneous operations on the stomach and duodenum. Of the 96 cases, six ended in death, four deaths being due to postoperative peritonitis, one to postoperative hemorrhage, and one to embolism and pneumonia. These losses were due to tampon drainage except in one case in which choleperitonium followed the removal of a so-called regenerated gall bladder with primary closure of the abdomen. In all of the four cases the biliary peritonitis originated in the bed of the liver. The ligation on the cystic duct failed to hold. Rupture of subcapsular biliary ducts in enterogenous cholangitis must also be considered. Bile entered the abdominal cavity in considerable number of cases even when the abdomen was closed primarily. Transplanted omentum gave good impermeability. Probing of the common bile duct and choledochotomy have been done less frequently than formerly but four transduodenal choledochotomies were successful. Primary closure of the abdominal wall was done fifteen times with good final results.

The advantages of primary closure are enumerated. The author examined the aspirated gall

bladder contents during the operation several portions of the last part of the gauze strip removed after several days, and the last part of the introduced drain. Even when the gall-bladder contents were infected, the moist strips were free from bacteria. Streptococci were cultured from strips removed on the ninth day only in one case in which a suppurating gall-bladder was removed. Strip drainage is therefore no longer used as a routine, but cases for primary closure are carefully selected.

Of the seventeen cases in which a simultaneous gastro-intestinal operation was performed the gall bladder was unexpectedly found diseased in fourteen. Primary closure was done in five, and strips and drain were introduced in twelve cases. On the basis of the results in this series the author concludes that gastro-intestinal operations should not be complicated by cholecystectomy unnecessarily but if a latent diseased gall bladder changed by non-inflammatory conditions must be extirpated, primary closure of the abdomen is indicated. If a seriously damaged gall bladder must be extirpated, gastro-intestinal operation is dangerous if the anastomosing suture remains in contact with the drain (Billroth I). It is therefore advisable to use the Billroth II procedure and in addition to cover the layer of sutures in the scrota lying near the drain. Tension on the sutures used in the Billroth I technique is also sometimes dangerous. Primary closure of the abdomen is of value in simultaneous operations on the gastro-intestinal tract and gall bladder.

SCHWARTZ (2)

Morley J. Congenital Cyst of the Common Bile Duct with Report of Two Cases. *Brit. J. Surg.* 9:3-4:3.

Congenital cyst of the common bile duct is a rare condition. Morley was able to collect only thirty-nine cases from the literature. This number he adds two cases of his own.

The anatomical picture is constant, consisting of cystic dilatation of the upper portion of the common bile duct which enlarges slowly and progressively much like a sacular aneurism. The hepatic and cystic ducts may open into the cyst separately. The intrapancreatic and intramural portions of the common duct are not involved in the cystic dilatation. Whenever investigated, the lower end of the common duct has been found patent and usually in the medial wall of the cyst. It would appear that distention of the cyst by bile causes valvular obstruction in the common duct at the point where it is suddenly reduced to its normal caliber. Such an assumption would explain the jaundice which is so frequently associated with the condition and is often intermittent, remission being associated with diminution in the size of the cyst. The sacular nature of the dilatation, with normal ducts above and below the sac, forms a striking contrast to the diffuse dilatation of the bile ducts seen as a secondary result of gall stone obstruction or compression of the common duct by pancreatic tumor.

When first observed these cysts are usually about the size of a coconut. In the case reported by Morley there was marked obstruction of the third part of the duodenum by compression behind the superior mesenteric vessels, due to the downward thrust of the cyst on the small intestine and the root of the mesentery. Up to this point the duodenum was decidedly dilated, and beyond, it was contracted. The author believes that this duodenal stenosis may account for the gastric distress recurring an hour or so after the ingestion of food.

The gall bladder has generally been found more or less empty but sometimes contains sufficient bile to form a small palpable swelling immediately above the large cyst.

The cyst wall varies in thickness in some cases it is very thin while in others it is thick, tough, and opaque. In Morley's case there was no mucous membrane lining and the wall was made up of dense fibrous tissue with a layer of endothelium on the outer surface where the peritoneum was attached.

The condition first appears between the ages of 24 and 30 years, but in two cases it is present at birth. Of the forty-one recorded cases, 48 per cent were those of females. Embryological development of the liver and bile ducts throws no light on the causative factors. Bidde suggests that these cysts are due to pancreatic rests in the walls of the common duct, the cells of which break down and thus originate the dilatation. There appears to be no evidence to warrant this conclusion.

The clinical manifestations consist of attacks of abdominal pain associated with tumor and usually some jaundice. The attacks occur at irregular intervals and vary from a sensation of fullness or acute indigestion about half an hour after eating to less frequent attacks of more severe colicky nature.

The tumor varies greatly in size. It may become so large as to fill almost the entire abdomen with the exception of the right iliac fossa. The size may change from time to time, but tends to become gradually larger.

Jaundice is present in most cases. In Morley's case it was shown by only a slight tinging of the sclera for a short time.

Two factors have combined to make the mortality very high. The first is delay of treatment until the patient cannot withstand a major operation. The second is failure on the part of the operator to recognize the condition and to adopt the proper operative procedure.

Temporary drainage of the cyst may be adopted as a palliative measure if the patient's condition is critical. However primary choledochoduodenostomy without drainage would appear to be the operation of choice whenever the patient's condition permits. In cases demanding only temporary drainage duct-intestine anastomosis should be done as soon as possible.

McLester Hammett M.D.

Ross, F. and McVester P. D. A Method for the Permanent Sterile Drainage of Intra-Abdominal Ducts as Applied to the Common Duct. *J. Exper. Med.* 91:3, XXVII.

The many attempts to maintain rubber tubes in connection with the common ducts of animals to collect bile over considerable periods of time have been so uniformly unsuccessful as to warrant the belief that such tubes will always come away within a few days. In one of the authors' recent cases, in which a longer portion of the tube than usual was left within the peritoneal cavity the tube as found firmly fixed in place after a period of nearly two weeks and there was no sign of ascending infection with destruction of the duct wall next to the cannula such as had terminated previous observations. The tube was thinly but closely sheathed in omentum which met and joined the common duct, the entire collection apparatus being covered. Elsewhere in the peritoneal cavity there were no adhesions.

Acting on the suggestion presented the authors developed a method whereby the total bile can be collected in a sterile stat. day after day certainly for a period of months and probably for years. Their experiments were performed on dogs. A long drainage tube was inserted between the common duct and the opening in the abdominal wall. The tube employed was phable near the cannula. Use was made also of curved glass tubes with the soft black rubber tubing connecting with the cannula on one limb, and pieces of duodenal tubing which was to pass through the abdominal wall on the other.

By the method described bile was collected from seventeen dogs for periods ranging up to three months.

The following conclusion is drawn:

The sheath of omentum which forms about long rubber tube left within the peritoneal cavity provides such an efficient barrier to ascending infection that the tube can be employed for the permanent drainage of the common duct, whereas a short tube will come away after a few days.

GEORGE E. BELL, M.D.

Mann, F. C. and Giordano, A. S. The Bile Factor in Pancreatitis. *Arch. Surg.* 9:3, VI.

The authors have investigated the bile factor in pancreatitis from two chief aspects: the anatomical and the experimental.

Two anatomical mechanisms have been suggested whereby bile can be passed into the pancreatic duct. One is based on the possibility that an obstruction could occur at the exit of the common bile duct so as to convert the two ducts into a continuous channel. The relationship of the common bile duct to the pancreatic duct and their mode of entrance into the duodenum in man were studied in order to determine the percentage of instances in which there could be an anatomical basis for the hypothesis mentioned. The data proved conclusively that the number of instances in which the anatomical arrangement in the relationship of the two ducts

would permit bile to pass into the pancreatic duct is very small. The other possibility that the sphincter at the duodenal end of the common bile duct could contract and convert the two ducts into a continuous channel, has also been investigated.

The data show that in most instances in man the sphincter is located at a point where contraction will close both ducts and will not convert them into a continuous channel, but in a very small percentage of instances a small bundle of muscle fibers is found in a position where possibly it could convert the two ducts into a continuous channel. Therefore while there is anatomical basis for the possibility of converting the two ducts into a continuous channel, either by mechanical obstruction or the action of a sphincter muscle, the percentage of instances in which this could occur is very small.

Three lines of investigation were followed:

1. Experiments to estimate the possible pressure the existing physiological mechanism could exert to inject bile into the pancreatic duct. This pressure was found to be relatively low.

Sterile bile was injected into the pancreatic duct at the maximum pressure that could occur in the common bile duct. This did not cause typical hemorrhagic pancreatitis, although definite damage of the pancreas sometimes occurred.

2. The common bile duct of goats (a species in which the main pancreatic duct opens into the common bile duct) was ligated. This did not produce acute pancreatitis.

The investigation has proved that there is an anatomical and physiological basis for the theory that reflux of bile may occur in the pancreatic duct. The evidence indicates that such reflux may be the cause of chronic pancreatitis. The number of instances in which the necessary anatomical conditions are present for this occurrence is very small. The possibility of bringing into play a physiological mechanism which can infiltrate the pancreas with sterile bile to an extent that produces acute pancreatitis is questionable. Granted that the necessary anatomical, physiological and pathological factors are present and that the reflux of sterile bile under such conditions causes pancreatitis, such a cause for the condition must be very rare, few cases being on record.

A reflux of bile could not have been the cause in any of the cases of acute pancreatitis reported by the authors. Attention is called to the fact that any mechanism which will allow bile to pass into the pancreatic duct will also obstruct the flow of pancreatic juice. Furthermore bile has been found in the pancreatic duct in the absence of acute pancreatitis. In all cases of pancreatitis the pathologist should examine the relationship of the two ducts to the duodenum and to each other to determine whether it is anatomically possible for bile to pass into the pancreatic duct. The data included in this article prove conclusively that we must look elsewhere for the explanation of the cause of most cases of pancreatitis.

JOHNS, D. F. Acute Pancreatitis. *Surg. Cl. N. Am.* 9, 4, 5

Pancreatitis associated with infections of the biliary tract is an inflammation of the interstitial tissues due to infection. Frequently the infection is carried through the lymphatics of the biliary system. Acute pancreatic necrosis is a necrosis of the parenchymal cells due to retrojection of bile into the duct of Wirsung or of duodenal contents into the duct of Santorini. In the author's opinion these may be two distinct diseases. Interstitial pancreatitis may be acute or chronic, but pancreatic necrosis is always acute. Interstitial pancreatitis tends to become cured whatever operation is performed. Pancreatic necrosis causes death in 70 per cent of the cases.

In 1855 Bernard caused acute pancreatic necrosis by injecting bile and sweet oil into the pancreatic duct. In 1900 Oppe described a case of acute hemorrhagic pancreatitis in which a gall stone was impacted in the papilla of Vater so that the common duct was blocked and bile was regurgitated into the pancreatic duct. Oppe found that the anatomical arrangement of the ducts favors this condition in thirty of 100 persons, and Judd and Mann demonstrated such an arrangement in nine of 100 persons. Infected or changed bile will cause greater necrosis. Archibald showed that the sphincter of Oddi of the papilla of Vater will resist a pressure of 400 to 700 mm. of water. Judd and Mann found that the contraction of the gall-bladder adds a pressure of only 50 mm. of bile. The violent muscular effort of retching increases the pressure in the biliary system to 500 and 700 mm. of bile.

Pancreatitis has been found in 23.8 to 50 per cent of the cases of cholelithiasis. Gall stones were found in 50 per cent of forty-two cases of pancreatic necrosis in the Massachusetts General Hospital.

The author reviews fifty-six cases of pancreatic necrosis (forty-two from the Massachusetts General Hospital and fourteen of his own).

The condition is characterized by sudden severe epigastric pain associated with shock of greater or less intensity depending upon the extent of the lesion. After the first attack the pain may be felt also in the back. The patient becomes restless, nauseated and vomiting, re-persistent and obstinate is present.

The pulse is 100 to 160, often too rapid and too small to count. The temperature is subnormal for the first few hours, but gradually rises to 100 degrees F. The patient becomes cyanotic. The leucocyte count rises from normal to 5,000. The abdomen contains fluid and is very slightly tender all over. Definite localized tenderness extends from the gall bladder region toward the left, 4 times being more marked to the left of the spine. There may be tenderness also in the left costovertebral angle due to involvement of the tail of the pancreas.

The results of various methods of treatment in the fifty-six cases of acute pancreatic necrosis are summarized as follows.

Operation	Alive	Dead	Healed	Discharged	Perished
No operation	6	6		6	6
No drainage or drainage of abdominal cavity		10			10
Drainage of pancreas including abscess	29	25	4	2	20
Drainage of pancreas without abscess	20	1			21
Drainage of abscess alone					60
Drainage of biliary system	3				60
Drainage of biliary system and pancreas	3			3	100
Total mortality					60.7
Total mortality not including cases of abscess					7.3

The author reports five cases. In four gall stones were found. There was one death, that of a patient with stone in the ampulla of Vater. In four cases the pain occurred after a heavy meal. In all of the cases the pancreas and the pancreatic capsule were drained through the gastrohepatic omentum; in addition, cholecystostomy and drainage were done in two and cholecystectomy and drainage of the common duct in one. Operation relieved the pain at once. In some of the cases the pulse and temperature fell promptly.

Drainage of the fatty pancreatic capsule or the pancreas gives the best results. The author advises operation under novocaine or gas anesthesia as soon as the patient's condition will permit it. The ideal operation is drainage of the common duct, the fatty pancreatic capsule and the pancreas. If the common duct cannot be drained easily, cholecystostomy should be done. If the patient's condition will allow only slight operative procedure, drainage of the fatty pancreatic capsule alone should be done. Drainage through the left loin has not proved satisfactory. In acute hemorrhagic pancreatitis, in which the patient's condition does not permit a prolonged operative procedure, cholecystostomy is indicated.

One patient who was operated upon seven years ago still carries a tube because of discharge of clear fluid which possibly comes from a pancreatic cyst. The fluid is not pancreatic secretion. For the first time this patient's urine now contains sugar.

WALTER C. BURKE, M.D.

Rigby H. M. Acute Hemorrhagic Pancreatitis  
Round Worm in Pancreatic Duct. *Brit J Surg*  
9 3 7, 4, 9

The author reports the case of a woman 30 years of age who was seized with sudden severe pain in the abdomen and back. The pain was especially intense in the lower abdomen. Vomiting occurred frequently and the bowels did not move for two days. When the patient was admitted to the hospital the following day her condition was grave. The pulse was so small and irregular. Respirations were 30 in the minute, and the temperature

was 100 degrees F. There was no history of gastric or menstrual disturbance. The abdominal wall was rigid. Tenderness was most marked over the lower part of the abdomen.

Operation revealed in the peritoneal cavity free fluid which was reddish and odorless. A second incision was made in the upper abdomen. Fat necrosis was seen and the pancreas was red, soft, and greatly swollen. Gauze tampons were passed down to the surface of the pancreas. The gall-bladder showed no disease. The patient died the next evening. At postmortem examination hemorrhagic pancreatitis and a round worm wedged in the ducts of Wirsung and Santorini were found. The terminal loop of the duct of Wirsung was bile-stained and there was some dilation of the common duct.

J. A. H. MACGILL, M.D.

Kraus, L. Necrosis of the Pancreas. A Case of Total Segregation (Eos Requiring the Necrosis of the Pancreas in Total Segregation)  
*Wien Klin Wochenschr* 9 100 437

A man 46 years of age who had suffered for long time with lumbago and cramping in the stomach ultimately developed stercoraceous and became jaundiced. After a period of three months fluctuating tumor the size of an infant's head developed in the epigastrium. As there was also high temperature a diagnosis of abscess of the left lobe of the liver was made.

At operation, well-encapsulated retroperitoneal cyst containing bits of calcareous pus was removed from the pancreas. The pancreas showed numerous sequestra throughout, measured 5 cm in length, and weighed 90 gm. The cyst contents included tryptic and diastatic ferments. The patient recovered.

After the operation the assimilation of food was aided by the administration of pancreas. Transient symptoms of hyperthyroidism (protrusion of the eyes, exophthalmos, tendency to attacks of perspiration, and tremor of the hands) which appeared during the early crisis of the after treatment were of interest. The question whether the sufficiency of the digestion should be attributed to vicarious appearance of the heat function or to the remains of the pancreas is left unanswered. *Gaz. med.* (2)

Novis. Partial Obstruction of the Pancreatic Duct by Round Worms. *Brit J Surg* 9 3 4

The presence of worms in the pancreatic duct is rare. In eastern countries the author has found them free in the peritoneal cavity in cases of perforation of the intestines. In one instance obstruction was caused by a bunch of fifty nine worms. The following case is cited.

The patient was a girl 7 years of age who, eight days before her admission to the hospital was seized with severe colicky pain in the abdomen and vomited once. The severe symptoms then subsided but dull pain in the epigastrium persisted. Similar attacks of pain occurred at irregular intervals.

On the patient's admission to the hospital her general condition was good. At examination an indefinite tender swelling was found in the epigastrium, and the overlying recti were somewhat rigid. The urine was normal. After observation for several days, during which time there were attacks of pain resembling renal or biliary colic, a laparotomy was performed. The stomach, gall-bladder and bile passages were normal, but the pancreas was found greatly enlarged. An incision was made in the pancreas from its head to its tail. When the pancreatic duct was opened, full-sized living round worms and a dead one were removed. The pancreatic incision was closed with interrupted sutures and the abdomen closed around a cigarette drain passed down to the pancreas. Convalescence was uneventful.

J. A. H. Macdonald, M.D.

**Orkow, I. I.** *Surgery of the Pancreas. The Diagnosis and Treatment of Primary Carcinoma of the Pancreas, Particularly of the Body and Tail of the Gland (Zur Chirurgie des Pankreas. Zur Diagnostik und Therapie des primären Pankreaskarzinoms insbesondere des Kopfes und des Schwanzes der Drüse).* *West. J. Chir. paper* 1914, 9, 2, 3.

The author has had three opportunities to operate on primary carcinoma of the pancreas. All of the three tumors were situated in the body (not in the head) of the gland. Every case was characterized by palpable tumor and very severe, colicky pains in the epigastrium independent of the taking of food.

**Case.** The patient was a man 55 years old who gave a history of pain for four months. An immobile nodular hard tumor was palpated in the epigastrium. Chemical examination of the stomach contents was negative. Urinalysis showed per cent sugar. Slight jaundice was present. A diagnosis of cancer of the pancreas was made. At operation the diagnosis was confirmed. The tumor was situated in the body of the gland and inoperable. Death occurred four and one-half weeks after the operation.

**Case.** The patient was a woman 58 years old who had had epigastric pain for 12 months and attacks of diarrhea and vomiting. When seen by the author she showed pronounced cachexia but no jaundice. A hard, immobile tumor was palpated in the region of the stomach. The clinical diagnosis was carcinoma of the transverse colon. At exploratory laparotomy an inoperable carcinoma of the pancreas was found. Death occurred from exhaustion one and one-half months later.

**Case 3** is particularly interesting because it was the first case in which pancreatectomy for carcinoma gave a successful result of long duration. The patient, a woman of 39 years, is still living nine years after the operation. Treatment was sought because of pain in the epigastrium of many years standing which was attributed to an old peptic ulcer. On September 1, June 9, the tumor discovered a very mobile hard tumor of rapid growth in the left hypochondrium. There was no glycosuria. The

patient was examined by Koerte, Bier, Israel and Kuttner. The retroperitoneal site of the tumor was determined by means of the X-ray and the diagnosis of tumor of the pancreas was made by Koerte.

On April 13, 1915, laparotomy was performed by the author. A hard nodular mobile tumor the size of two fists, was discovered behind the stomach. This growth had permeated the entire body and tail and part of the head of the pancreas. The ductus choledochus ran behind the gland and outside it. After removal of the tumor, a piece of the head of the pancreas, 4 cm long and 3 cm wide remained. The duodenum was exposed in its entire periphery. The stump of the pancreas was sutured with a double row of sutures and covered with free piece of omentum. The abdominal wound was closed around a small tampon.

For a short time during the healing of the wound there were bloody stools, but thereafter recovery was good. The microscopic diagnosis was cylindrical cell carcinoma. When the patient left the hospital on May 8 she was instructed to take a pancreatic ferment. Without this preparation she always experienced digestive disturbances, but when she continued to take it she was able to enjoy mixed diet with no ill effects.

Up to 1918 her condition remained good, but riding in a carriage or in a railway train caused severe pain in the upper abdomen. In November 1918, the author discovered a hard tumor the size of a pea in the left clavicle. Soon after this the patient left to make her home in Austria, where she is at the present time. The tumor of the clavicle which has grown rapidly is being treated with the roentgen rays. The latest report dated June 4, 1919, is fairly favorable as regards her general condition, and states that the tumor of the clavicle has somewhat decreased in size. The patient is not able to get along without the pancreatic medication and occasionally experiences colicky abdominal pain.

In a review of the literature on the diagnosis and treatment of primary cancer of the pancreas the author brings out the following important facts: The most constant symptom is severe pain in the epigastrium, calling to mind tabetic crises and termed by Dieulafoy *drame pancréatique* and by Schereschewsky *annihilating pains*. Another characteristic is the hard sometimes mobile sometimes immobile epigastric tumor in which pulsating movements may often be recognized. Loss of function of the pancreas is not always found in cases of tumor of the body or tail of the gland, glycosuria is very inconstant.

Operative treatment of tumors of the pancreas has not been very successful. According to Koerte (1920) the literature reports only sixteen resections and extirpations of tumors of the pancreas with six operative cures. Koerte's own case of cytadenoma of the pancreas remained cured for seven years after the extirpation. *Petersen (2)*

Eastman, J. R. A Safe Method for Drainage of Intrabdominal Abscesses. *J. Indiana State M.* 1919 9 3 xvi, 6

Eastman describes a method for the draining of deep seated abdominal abscesses through flank incision.

The incision is made down to the peritoneum and the peritoneum is then carefully peeled off, tract being thus made; the abscess outside of the peritoneum.

If it is not thought advisable to open the abscess at this time, the tract is loosely packed with gauze and a tube inserted in contact with the abscess wall dependence being placed on chemotaxis to cause rupture.

If the abscess does not open spontaneously it may be opened safely after adhesions have been formed around the gauze by passing long dressing forceps into it, through the drainage tube.

EDWIN R. TALBOT, M.D.

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Bloodgood, J. C. The Diagnosis and Treatment of Bone Lesions. A Brief Summary of the Salient Features. *Am. J. Roentgenol.* 6 3 4

This article gives in brief the salient facts of lectured by the author from over 2,000 records of bone lesions. The review includes only cases of tuberculous and pyogenic osteomyelitis which suggest periosteal or central malignant lesions clinically and in the roentgenogram.

With regard to the diagnosis from the roentgen standpoint stress is laid upon the importance of examining the corresponding bone as well as the diseased bone to avoid mistaking anomalies for disease. After further roentgen examinations are valuable to show possible unsuspected fractures and to reveal pre-existing osseous lesions. The roentgenogram is also a record for comparison if the tumor exhibits benign or malignant pathologic process. When the roentgen examination reveals one lesion it is well to examine all the other bones to determine whether there are others. This may give valuable information in differentiating between primary sarcoma and such conditions as metastatic carcinoma, multiple myeloma, multiple bone cysts, and chondroma. The demonstration of multiple exostoses exhibits in benign cases. Roentgen examinations of the chest should be a routine procedure in cases of bone lesions in order that early metastases may be discovered. The discovery of pulmonary tuberculosis may be suggested in determining the site of doubtful bone lesion.

Palpation gives considerable information. When the periosteal bone formation is distinctly bony, malignancy is improbable. When a soft part tumor about the bone is palpated and the roentgenogram shows it to be composed only partly of new periosteal bone, there is definite evidence that the lesion is periosteal or soft part lesion with secondary involvement of bone.

Spindle shaped periosteal growths surrounding the bone which the older textbooks and literature attributed are pathognomonic of sarcoma, the author believes not focal pathognomonic of this condition. Perforation and destruction of the bone shell is not indicative of malignancy. Calcified areas in the

soft parts outside the involved bone and a definite clear area between them and the bone are suggestive of tuberculous and giant sarcoma.

The diagnosis of bone lesions from the roentgenogram alone is very mistakable. The clinical history and other laboratory examinations, such as the Wassermann test, a complete blood examination, an examination of the urine for Bence Jones bodies, and a search for foci of infection are of great importance.

When the roentgenogram shows an evident periosteal lesion and the Wassermann test is negative at least one dose of intravenous bismarck should be given. The author has had four cases in which this procedure resulted in rapid improvement and permanent cure.

As regards the localization of the lesion, certain generalizations are possible. In a recent study of all the central and periosteal lesions of the phalanges, a single example of central sarcoma of phalanx and no case of periosteal sarcoma was found. Of the central lesions of the lower end of the radius 90 per cent are giant cell tumors. Periosteal and central lesions of the scapular, metatarsal and tarsal bones are very rarely malignant up to the present time no lesion of carpal bone not due to inflammation (usually tuberculosis) has been found.

If the roentgen examination shows a distinct central lesion with definite bone shell and with or without fracture and no extra-osseous soft part lesion if palpation reveals nothing and if the patient is under 30 years of age it is very probable that the condition is bone cyst. The next possibility is the giant cell tumor rarely chondroma and in very few instances, tuberculosis. Operation is not indicated in bone cyst especially when there is pathologic fracture. The fracture usually cures the bone cyst and subsequent roentgenograms will reveal rapid ossification not only of the fracture but also of the central area of destruction. When rapid ossification does not show operation is indicated. Once operation has been the healing of the bone cyst and is the best treatment for the giant cell tumor or chondroma. When the roentgenogram shows no fracture operation promises more rapid and permanent ossification if the lesion proves to be bone cyst and is the best treatment for the giant cell tumor and chondroma.

If the patient is over 5 years of age and the roentgenogram shows a central lesion with a definite bony shell, with or without fracture, nothing is to be gained by delay. Sarcoma cannot be excluded. The order of frequency of central bone lesions after the age of 15 years is as follows: benign giant cell tumor, the recent and the old unhealed bone cyst, sarcoma, chondroma, myxoma.

The author's experience to date seems to show that roentgen and radium treatment cannot be expected to affect the pathologic process through a bone shell, and that radiation is employed largely for conditions in which it is neither necessary nor valuable.

As regards the method of attacking the single central bone lesion, Bloodgood states that the purpose of operation should be to remove and destroy the pathologic tissue within the bone shell by a technique which will prevent, as far as possible, the implantation of tumor tissue into the soft parts. This is best done by thermal and chemical cauterization. If the lesion is probably sarcoma, the implantation of radium into the cavity and post-operative radium or roentgen treatment is advisable. Immediate bone transplantation into large cavities has been unfavorable in the author's experience except in bone cyst, but in this condition it is not necessary.

A cure of central sarcoma is obtained after amputation in less than 1 per cent of the cases. Because of this fact and because it is the rare central lesion and often difficult to differentiate from variants of the bone cyst and the giant-cell tumor, the treatment described seems justifiable when there is a central tumor of bone with an intact bone shell, even when the gross appearance at operation and the microscopic picture strongly suggest sarcoma.

The problem of diagnosis and the plan of attack are essentially different in periosteal bone lesions as compared with central bone lesions. Age is of diagnostic significance. It is very difficult in many instances to distinguish the periosteal sarcoma with or without bone formation from the benign periosteal lesions with or without bone formation.

Up to the present time the author has obtained only two permanent cures after amputation for periosteal sarcoma. Recently he has had two cases which reacted favorably to radium. In one, the improvement has continued for two years; in the other there has been recurrence after eighteen months, but radium treatment is again causing improvement. Because of this experience Bloodgood believes that every case should receive salvarsan first and then roentgen and radium treatment. If there is no improvement, amputation should not be done unless microscopic diagnosis is made, except in cases of periosteal sarcoma in which positive diagnosis from the roentgenogram is possible.

Recent experience has demonstrated that the number of benign periosteal lesions of single bones resembling periosteal sarcoma in the roentgeno-

gram and clinically is increasing. As cures of periosteal sarcoma are so infrequent even after amputation and as the possibility of error is still great, amputation should be considered only when all other measures have failed. Especially in cases of traumatic and infectious ossifying periosteitis difficult to differentiate from sarcoma there is always possibility of spontaneous recovery.

ADOLPH HARTMAN, M.D.

Wegley: The Traumatic New Formation of Bone  
Myositis Ossificans and Parosteal Bone Cysts  
(Über traumatische Knochenbildung, Myositis ossificans und parosteale Knochenzysten.) *Beit. Klin. Chir.* 912, cxvii, 43.

On the basis of the findings in four cases the author attempted to determine (1) whether the source of origin of the ossification is the periosteum or the muscle connective tissue, (2) what conditions favor the ossification, and (3) whether the final result is a true new formation, an inflammatory process, or a degeneration.

In the first of the four cases there was formation of bone within the muscle after a chemical injury due to salvarsan and an effusion of blood into the tissues. The injury did not affect the periosteum of the humerus in this case, at any rate not so as to cause the penetration of small pieces of periosteum into the muscle. The matrix of the bone formation therefore must have been the muscle connective tissue which showed proliferative processes with degeneration of the fibers and transition stages to newly formed spongy bone.

The second and third cases showed very advanced changes in close relationship to the bone processes. The fact that a considerable area of the femur was stripped of periosteum indicated that the periosteum was a factor in the new formation of bone. On the other hand, as the microscopic and macroscopic findings were very similar to those observed in the first case, the muscle connective tissue may have been in part responsible.

The fourth case was similar to Cases 2 and 3. The striking feature in this instance was the fact that the ossification was found far from any normal bone and in the center of a peculiar germinal tissue. The origin of the latter might have been the muscle connective tissue. The periosteum and the muscle connective tissue were probably the bone-forming matrix.

The main mass of bone in the last three cases was attached to the femur. In the fourth case the ossification originated in the granulation tissue. It is probable, therefore, that the new formation of bone proceeds more intensively and rapidly from the periosteum than from the connective tissue. In the process of ossification, cells with large vesicle-like nuclei are formed, and these, through the breaking down of their protoplasm, unite to form slowly calcifying giant cells.

In every case the exciting cause of the ossification was trauma—in the first case the unsuccessful





The diagnosis is usually easy because there is no other congenital disease in which multiple fractures occur. Rickets and syphilis occasionally cause fractures in young children but it is rare that more than two or three fractures occur in the same person as a result of these affections.

The treatment recommended is care to prevent deformities and the administration of cod liver oil and phosphorus. Care to prevent fractures is the most important single factor in the treatment of osteopathyrosis.

PHILIP LEWIS, M.D.

Davis, G. G. Osteoclerosis Fragilis Generalisata. *Marmorirnochen. Albers-Schoenberg Disease. Arch Surg.* 9: 449.

The author reports a very interesting case of bone pathology, the tenth case of the kind to be reported in any language and the first to be reported in English.

The patient was a boy of 11 years who entered the hospital with fracture of the right leg, the result of a rather trivial injury. Previously he had had other fractures following slight trauma. The roentgen ray study of the entire skeleton revealed generalized abnormality of the bone structure characterized by marked, irregularly increased density of some portions of the bones and rarefaction in other areas. In the long bones, the tendency was toward marked narrowing of the medullary canals in the middle third, due to thickening of the cortex, the ends of the shaft presenting an expanded appearance and showing thinning of the cortex and a coarsely mottled effect due to increased density in the marrow cavity. The small bones, such as the vertebrae, carpal, and tarsal, presented a generalized increased density with absence of bone structure. The epiphyseal lines were all present and normal in width, but had slightly irregular margins. The epiphyses showed general increase of density with absence of bony structure but appeared normal in size and outline.

PHILIP LEWIS, M.D.

Ghorraley R. K. A Case of Congenital Osteoclerosis. *Bull Johns H.kins Hosp. Balt.* 9: 444.

A careful review of the literature failed to reveal a case in which the condition described was diagnosed during life. Several cases reported were diagnosed at autopsy as osteoclerosis, the condition being regarded as congenital in some and as associated with a disturbance of the blood forming organs in others.

The author gives the history and the findings of the physical examination in his own case and includes several illustrations. On first seeing the case in the dispensary he regarded it as being epiphyseal separation of the head of the left femur. Roentgenograms of the pelvis taken at that time showed a peculiar density of the bones. Several roentgenograms made later confirmed this finding. Roentgenograms of all the bones revealed

practically the same condition throughout the entire skeleton. In addition the vertebral bodies showed marked density at both poles, there was thickening of the cortex of the ribs, the marrow cavity was apparently obliterated at certain points and there was definite thickening of the cortex, especially in the distal portion, of the long bones, particularly the femora and humeri. The skull was thicker than normal. In both femoral necks, especially in one, there seemed to be a breaking down of the bone just below the epiphysis, the latter structure being displaced inward and downward.

The bones of the patient's mother were shown by the X-ray to be normal but the father's bones were exactly like those of the child.

PHILIP LEWIS, M.D.

Coxs, S. M. The Pathology of Osteitis Deformans, Paget Disease. *J Bone & Joint Surg.* 9: 8.

The author gives a very complete description of the pathology of osteitis deformans, having had the opportunity to study the bones and the tissues of organs in a case whose clinical history had already been completely reported.

Unfortunately neither the pituitary gland nor the skull bones could be obtained, but otherwise the report is complete. This abstract will be confined chiefly to the bony pathology.

The author concludes that osteitis deformans presents osteoporosis with disappearance of bone by lacunar absorption and chemical (vital fluid) dissolution, accompanied by new formation of bone. In the case under discussion the new formation was not so marked as in the cases reported by others. The active process seemed to have been completed.

There was evidence of breaking down of bone—that is, bending of trabeculae crushing down on neighboring cancelli, obliterating some canals and assisting in the formation of others.

There was marked vascular degeneration with varicose vessels, thrombosis, congestion, leakage with edema and minute hemorrhages. The surrounding tissues were modified to a certain extent as evidenced by changes in vessels, nerves, muscles, and tendons. It is suggested that this was due to bone absorption throwing them in contact with accustomed (unusual) neighboring material. In the case of muscle attachments the distortion and microscopic changes were especially marked.

In certain areas the bone itself showed reversion to fibrous type: there was a metaplasia to myxomatous tissue and the marrow was myxomatous, fibrous, or cellular, the bone cells taking part in the process. In some of the bones there was what appeared to be a reversion of marrow to the embryonic type showing small and large round cells, megakaryocytes, and normoblasts. Possibly this was compensatory. The bone-cell multiplication was an essential part of the disease.

The pathologic changes arose in the different bones and in various parts of the same bone.

There was evidence of analogous conditions in bone in the organs, tissues, and nerves. This was most evident in the tendency to overgrowth cell multiplication. The circulation had been erratic for years, with intermittent compensation and the reverse, the bones, organs, and soft parts being correspondingly affected. The changes involved corresponded to those found in chronic inflammation or in resolution of acute inflammation where repair is the most important factor.

The author believes that in this condition there is primary blood vessel pathology similar to that in hereditary or acquired syphilis, with accompanying bone changes such as are found on a small scale in chronic puslike congestion and infections of a chronic character. It is not at all improbable that malaria, typhoid, influenza, erysipelas, or parasites may produce such vascular lesions with local and general osteitis deformans.

The article is supplemented by complete bibliography and an excellent discussion by Morrison and Myers.

PETER LEWIS, M.D.

White, E. F. C.: Osteitis Deformans in Monkeys. *Arch Int Med* 922, 222, 190.

The author reports three very interesting cases of osteitis deformans found among 6570 consecutive postmortem examinations in the laboratory of the Philadelphia Zoological Society. These were the cases of three monkeys, a red woolly monkey, a black spider monkey and a brown cebus monkey. The pathologic reports are given in detail. The cases are of interest because:

They are typical of Paget's disease as it has been found in man.

They show the same general type of inorganic metabolism as that exhibited in man.

Abundant hunger was shown by one of the monkeys and in two clinical cases before the development of the deformity and disappeared after the deformity was established.

The disease developed in animals fed on diet insufficient in its inorganic and vitamin content, to which an excess of calcium was added.

From his study White concludes that Paget's disease may be merely one stage of a deficiency disease that it may be reparative response through (1) a disordered neurotrophic mechanism (2) per-  
eption of the calcium governing glands which have been disturbed by an improperly balanced diet, or (3) the addition of an excess of calcium to the diet of an animal whose body finds are unable to hold it in solution because of faulty diet or other factors.

PETER LEWIS, M.D.

Frieberg, A. H.: Osteochondritis Dissecans. *J Bone & Joint Surg* 923, 222, 1.

The author reviews the literature and reports four cases of osteochondritis dissecans of the knee and one case in which the elbow was involved. While for the present, at least, this interesting condition must be considered result of trauma,

Frieberg believes it is only an indirect result. He suggests that it is brought about through the coincidence of several factors: the terminal arteries present in the end of the femur may be injured by an abnormally long tibial spine; then the knee is in a position of flexion and the tibia is rotated outwardly. Frieberg found by examination of cadavers that when the knee is flexed and the tibia rotated outward even a normal tibial spine may be ready to impinge on the posterior cruciate ligament. If either tubercle of the tibial spine is abnormally long, it is conceivable that impingement might take place with sufficient force to cause vascular injury resulting in the death and separation of the portion of bone involved. The author draws attention to the fact that in one case, as in a case reported by him in 1910, the opposite knee became affected later.

The treatment is rhithotomy with the removal of all loose bodies. An X-ray examination should be made of every joint lesion of subacute or chronic character as by this means diagnosis can be made before locking has occurred or a loose body has been left at point distant from its bed. Experience has shown that loose bodies are for a time attached by pedicle and operation may then be performed through comparatively small opening. When the bodies have wandered from the site of their formation the procedure is more difficult.

J. C. WOODWARD, M.D.

Winslow, N.: Suppurative Osteomyelitis Due to the Colon Bacillus. *J Surg* 922, 127, 695.

This report of a case is particularly interesting as it deals with a comparatively rare condition. Winslow also reviews six other cases of osteomyelitis. In one the condition followed a gunshot fracture of the tibia and therefore did not represent the ordinary type of osteomyelitis. As in five cases there had been previous attack of what seemed to be typhoid fever it is possible that the organisms recovered might have been those responsible for the typhoid like illness, since both of these organisms belong to the same family group.

All age groups were represented. The structures involved were the femur and the costal cartilage; in three cases each. In two cases there was mixed infection and both of these patients died.

Winslow's case began as typical attack of osteomyelitis, an abscess developing rupturing spontaneously and apparently healing before the patient was admitted to the hospital. From the drainage incision there escaped large amount of foul smelling, thick, yellowish pus from which the colon bacillus was recovered. Winslow does not believe there was any connection between the attack of typhoid fever twenty years before and the osteomyelitis.

DREW W. CARR, M.D.

Thompson, J. E.: Tumors of Bone. *Surg Clin N Am* 923, 403.

The author mentions the recent advances in the study of tumors of bone and states that the majority

of museum specimens labeled giant cell sarcoma are no known to be benign giant-cell tumors.

Paget in 854 described very clearly a group of central tumors of bone which he called myeloid tumors, and regarding which he said, they are not apt to recur after complete removal, nor have they in general, any features of malignant disease.

Thompson reports three cases of myeloma, or benign giant-cell tumor. In one, amputation was done. The other two were treated by curetting. The author believes that the amputation was unnecessary and that amputation is done too frequently in such cases on the erroneous diagnosis of malignancy.

Another case reported was case of erythromatous osteogenic sarcoma of the femur. Amputation was done below the trochanters. Six years after the operation the patient reported perfect health.

The cellular elements from which osteogenic sarcomata may arise are present in the perosteum in the bone and to less degree in the marrow cavity. Round celled sarcomata of erythromatous type may arise from the lymphocytic cells in the marrow and frequently mask their appearance in several bones simultaneously.

DAVID H. LEVINSKY, M.D.

Bloodgood, J. C. Bone Tumors, Metastases to the Lungs from Pure Myxoma. *A. Surg.* 9 3, 1919, 66.

T cases reported by Bloodgood establish fairly definitely the fact that pure myxomata may give rise to metastases as well as to local recurrence.

In the first case the metastases to the lung appeared about ten years after the first operation, and in the second, four and one half years afterward which is late as compared with the metastases of true sarcoma of bone. In Bloodgood's opinion there is pure myxoma of bone with distinct gross and microscopic appearance. Grossly acid, gelatinous tapeworm-like material, which may be blood stained erodes under pressure from the bone capsule of the tumor.

Microscopically frozen sections are more characteristic than those made after long hardening. The pure myxoma is rare. Frequently the tumor is mixed with cartilage but more often is sarcoma. Osteitis fibrosa and pure chondroma have been diagnosed as myxoma or myxochondroma. Osteitis fibrosa is distinctly benign while pure chondroma recurs only when improperly or incompletely removed. There is nothing characteristic in the clinical or X-ray picture of either the perosteal or the central lesion. Therefore if an exploratory incision is made for diagnosis, the possibility of myxoma should always be borne in mind and the electric cautery and chemical cauterization with pure carbolic acid followed by alcohol and 50 per cent solution of zinc chloride should be employed to prevent transplacation of the tumor tissue.

ROBERT S. RANK, M.D.

Hansen O. S. Multiple Myeloma. *J. Am. U. Soc.* 9, 1919, 2030.

The author reports seven cases of multiple myeloma, four in men and three in women. The average age at onset was 55 years. The duration of symptoms from their onset to death ranged from three to twelve months, the average being seven and one-half months.

Bence Jones protein was found in the urine in only one of the seven cases after many tests had been negative. In several the diagnosis was not made before autopsy. The author believes that in multiple myeloma should be suspected in cases of backache or pain in the bones which cannot be explained satisfactorily otherwise.

The test for Bence-Jones protein should be repeated as the absence of this protein does not speak against a diagnosis of myeloma.

PHILIP LEWIS, M.D.

Brown, K. P. A Case of Solitary Cyst in the Humerus. *Edinburgh U. J.* 9, 1919, 306.

The case reported was that of a woman 5 years of age who was admitted to the hospital with fracture of the lower end of the humerus. A few weeks after, cold in October 9, the patient had complained of an ache which radiated from the elbow to the shoulder and occurred at irregular intervals. About June, 93, she felt her left arm crack while hanging up clothes. The Wassermann test was negative.

Examination of the left arm revealed a hard, smooth tumiform swelling  $\frac{1}{2}$  in in length at the lower third of the humerus. No cracking could be elicited. The X-ray revealed a cystic area in the center of the bone with partial destruction of the compact bone and fracture through this weakened area. Roentgenograms of the right humerus, the femora, and the tibia were negative.

The cyst contents were curetted and the bony wall surrounding the cavity left smooth.

Microscopic examination of the cyst contents revealed many bony spicules surrounded by cellular fibrous tissue. A small area of hyaline cartilage was also seen.

Bone cysts are related to osteitis fibrosa. They occur most frequently in the humerus, tibia, and femur usually near the epiphyseal cartilage. The lower end of the humerus is rarely involved. The etiology is obscure.

The diagnosis is based upon the history, microscopic examination and roentgenogram.

JOHN MITCHELL, M.D.

Stewart, M. J. A Large Myeloid Sarcoma of the Radius in Which the Tumor is White Through out. *Brit. J. Surg.* 9 3, 1919, 1.

Myeloid sarcomata are generally of a maroon color. This may be prevalent throughout the whole tumor or affect only part of it. The red area contains numerous multinucleated giant cells and red blood corpuscles, or hemorrhagic extravasations.

Some of the white portions are highly cellular actively proliferating myeloid tissue with large number of giant cells.

Page describes myeloid sarcoma in these words: On section, the cut surfaces appear smooth uniform, compact shining succulent, with a yellowish, not a creamy fluid. A peculiar appearance is commonly given to these tumors by the cut surface presenting blotches of dark or livid crimson, or of a brownish or brighter blood-color or of pale pink, or of all these tints mingled, on the grayish-white or greenish color base. This is the character by which, I think, they may best be recognized with the naked eye, though there are diversities in the extent, and even in the existence of the blotching. The tumor may be all pale, or have only a few points of ruddy blotching; or the cut surface may be nearly all suffused, or even the whole substance may have a dull modena or crimson tinge, like the ruddy color of heart or that of the parenchyma of a spleen.

The author reports the case of a girl 6 years of age who had had a swelling of the distal half of the left forearm for three years. During the last three months the growth of the tumor had been rapid. History of injury was obtained. The tumor seemed to spring from the radius. It was firm, regular and not tender. X-ray examination showed its site to be the distal half of the radial diaphysis. The central part contained no bone. The part excised for study was white and contained numerous osteoclast like giant cells. The surrounding muscle and other soft parts had been invaded.

Amputation was done. The axillary glands were not touched as the patient suffered severe shock. When she was discharged from the hospital no axillary glands were palpable.

The microscopic structure of the specimen was that of typical myeloid sarcoma. The preponderating tissue had mixed and spindle cell ground work with many multinucleated giant cells of the osteoclast type. There were many areas of acellular tissue.

Whether they are endosteal or periosteal sarcoma of bone which are here almost invariably highly malignant. The presence of enlarged axillary glands on the same side as the tumor suggests malignancy but so far no conclusive evidence has been produced to show that the enlargement is due to metastatic deposits. The author suggests that it is caused by the absorption of blood and the disintegration products of the tumor by the lymphatics.

JOHN MCDONALD, M.D.

Jeau, G. Brachydactylia Due to Congenital Shortening of the Metacarpals (Brachydactylia par raccourcissement congenital des metacarpiens). *Rev. d'orthop.* 9, 3, 1930, 235.

Congenital shortening of the metacarpals is a rare malformation. The first cases are reported by Sandifort in 1778. Jeau reports the case of man 30 years of age who had shortening of the right hand, and whose father and brother showed

similar malformation. The patient's third finger was much shorter than the others, but was not atrophied. The X-ray revealed absence of the distal part of the fifth metacarpal and fusion of the rest of it with the fourth metacarpal. The fourth metacarpal was of normal length but its diaphysis was thinned and curved slightly inward and its head much smaller than that of the second and third metacarpals. There were no malformations of the carpal or the forearm and no other anomalies.

Brachydactylia is usually observed in the first and fifth metacarpals. Generally the shortening is at the expense of the distal part of the bone. Synostoses and syndactylia are common both are shown by the X-ray.

The pathogenesis of shortening of the metacarpal must be sought in the mode of ossification of these bones. Ossification of the metacarpals does not occur until the eighteenth month of life, and malformation may result if the circulation is deficient. The finger has its own independent vasculature. The fact that such malformations are more common in the first and fifth fingers may be explained by the evolution of these bones. Probably also certain physiologic factors such as anatomic compression and embryonic infection are responsible.

W. A. BARNES

Henderson, M. B. Chronic Non-Inflammatory Lesions of the Knee Joint. *Arch. Surg.* 93, 11.

For the convenience of the surgeon, the knee joint may be divided into an antero-superior compartment (the suprapatellar pouch), an antero-inferior compartment, and posterior compartment, each of which may be subdivided into internal and external sections.

**Sprains.** Sprains of the knee joint are not uncommon. The internal lateral ligament is most often involved. The differentiation between damage of the internal semilunar cartilage and sprain of the ligament is not always easy but in cases of sprain locking does not occur and there is usually a full range of passive motion. Rest in the position of extension followed by baking and massage usually gives relief. If pain and tenderness persist, raising the inner side of the sole and heel often relieves by removing the strain from the internal ligament.

**Rupture of the crucial ligaments.** This condition is rare. If the anterior crucial ligament is torn, hyperextension of the knee is permitted and the femur slides backward on the tibia or the tibia slides forward and on the femur. When the posterior crucial ligament is torn, the femur may be pushed forward on the tibia or the tibia pushed backward on the femur. Treatment by the application of plaster of Paris cast with the leg slightly flexed often results in excellent function.

**Intra-articular fractures.** Severe direct trauma may cause these fractures. Little can be done in such cases without arthrodesis, which most patients will not permit. Prolonged fixation in cast or splint is apt to leave stiff joint. Early motion is essential,

and may be carried out under extension with a modified Thomas splint.

**Recurrent dislocations of the patella.** The patella may be dislocated out and may be satisfactorily operated on. The author reports the inner capsule and overlaps it broadly after lengthening the outer capsule. The condition is more common in women than in men, and there is a familial tendency.

**Old ununited fractures of the patella.** Treatment is difficult. The object is to obtain approximation of the fragments without tension and then bony union. The author makes a long, straight incision in the middle line, exposes the fragments, and freshens the ends of the fragments until good bone is reached. Beef bone screws have proved satisfactory to hold the fragments in coaptation. In the after-care, slight passive motion is begun in about four weeks, and soon thereafter slight active motion is encouraged.

**Intra-articular mechanical derangement of the knee joint.** The semilunar cartilages are the most common cause of mechanical derangement. The chief offender is the internal semilunar cartilage. The most common tear of this cartilage seen in the Mayo Clinic is the so-called bucket-handle type. Because of its loose attachment, the external semilunar cartilage is less often caught when it is caught, however. It is more apt to be detached at its periphery and crumpled rather than torn.

A primary locking of the knee should not be operated on, but should be reduced by applying pressure over the anterior aspect of the internal semilunar cartilage and rapidly extending the knee. When lockings are frequent, surgery is necessary. The antero-medial incision is the incision of choice for the removal of the internal meniscus.

Another cause of mechanical derangement is the presence of osteocartilaginous loose bodies which cause locking by becoming caught between the joint surfaces. Their formation is due to osteochondritis dissecans, hypertrophic arthritis, or osteochondromatosis. In osteochondritis dissecans there are rarely more than one or two bodies, which arise from the internal condyle of the femur. In hypertrophic arthritis loose bodies may be formed by the breaking off of osteophytic growths. In osteochondromatosis, osteocartilaginous bodies are formed from the synovial membrane and may be very numerous. Removal of such foreign bodies is indicated. The split patella incision is the incision of choice for the removal of bodies found in the anterior compartment. Multiple posterior lateral incisions are those most useful when the bodies are in the posterior compartment.

Martin, W. Sciatic Neuritis and Its Relation to Flat Foot. *Am Med J* 9 XXVII 69

Inflammation of the sciatic nerve may involve the peripheral tissues or the nerve trunk. Neuritis of the trunk is not so common as the less severe type. Perineuritis is of shorter duration and more amenable to treatment than neuritis of the nerve trunk. An inflammatory exudate thrown out is deposited

in the sheath itself but soon involves other tissues. Organization of this exudate results in pressure which in turn interferes with the nutrition of the nerve cells. Loss of motion or sensation or both and loss of muscular strength or atrophy may result.

Limitation of motion is the first severe effect of the adhesions caused by the exudate. In the later atrophic form of neuritis, pain is severe and cell nutrition soon disturbed.

At the lower third of the thigh the sciatic nerve divides into the external and internal popliteals which are continued through the tibia to the foot. Inflammatory conditions involving the tendons of the tendon of Achilles will influence the relative position of the astragali to the other bones of the foot, causing marked rotation or other malalignment of the heel due to tension or laxity of the tendons. It will also cut off the nutrition of the nerves. The author cites a case of flat foot resulting from sciatic neuritis secondary to tooth infection.

In such a case the source of the infection must be eliminated before the flat foot can be treated successfully. For good results the treatment must include both orthopedic and electrotherapeutic measures.

The author uses the salt water to express exudate from the tissues. This has also a sedative effect upon the inflamed nerve and a tonic action on the nerve cells. Relief from exudate pressure lessens the danger of atrophy.

When the nerve becomes less sensitive, the slow sinusoidal current is employed to restore the tone of the muscles and ligaments. JOHN ALMOND, M.D.

Moffat, B. W. Isolated Disease of the Scapoid. *J Am Med Ass* 9 3 LXXX 87

Forty-one cases of isolated disease of the scapoid have been reported since the first case described by Koehler in 1908. The disease has been mistaken for tuberculosis, but tuberculosis has not been demonstrated and the course and final outcome are not the same. The pathology is unknown.

Etiological factors suggested are osteomyelitis, tuberculosis, syphilis, vascular change, trauma and endocrine disturbance. As a rule the Wassermann reaction is negative, but in one case reported the teeth were notched and the child's mother had a + reaction. Trauma may injure the ossification center or tear off the nutrient vessels.

The clinical symptoms are a slight lump and discomfort or mild pain in the scapoid region. The scapoid is enlarged and tender but an abscess never forms.

The treatment is immobilization for three to ten weeks. The prognosis is excellent.

**CASE.** The patient was a child 7 years of age. Limping began 12 weeks before he was examined by the author. There was no history of trauma. The family and personal histories were negative. Pain occurred only at night. A prominence over the scapoid and tenderness on pressure were noted. The feet were markedly pronated. Immobilization for about six weeks caused disappearance of the

tenderness in the scaphoid. There was no recurrence up to 10 weeks later.

**CASE.** The patient was a child 6 years of age who limped and complained of slight pain. The foot had been run over by a truck about three months previously. This accident had caused disability for only four days. When the patient was examined by the author the foot was abducted and pronated and the scaphoid prominent and tender. The roentgenogram made just after the accident was negative, but when the patient came for treatment for the limp and pain the X-ray showed typical isolated disease of the scaphoid. A cure was effected by immobilization in a cast for about six weeks.

**CASE 3.** A child 7 years of age suffered an injury to his foot in July which disabled him for four days. A roentgenogram made in December showed Koechler's disease of the scaphoid. A cure was obtained after immobilization in a cast for a month.

**CASE 4.** This case is that of a child 7 years of age who had had swelling and limp in the right foot for two months. The foot had not been injured. Tenderness was present in the tarsus. A fluctuating mass appeared on the dorsum, broke, and discharged for several months. Necrotic bone was curetted from the cuneiforms and scaphoid and from the left elbow. The condition improved under arsenobismuth treatment.

In the author's opinion the disease is caused by injury causing hypertrophy of the scaphoid which, being cartilaginous up to the fourth year of age, becomes compressed, the soft, newly formed osseous portion spreading out laterally.

WILLIAM A. CLARK, M.D.

## FRACTURES AND DISLOCATIONS

Young, A. A Five-Year Survey of the Routine Treatment of Fractures by Operative Methods. *Bull. M. J.* 922 2, 309.

During the period of five years from May 1, 1917 to May 1, 1922 Young treated 693 cases of fracture. General anesthesia was induced in 459 cases. Open operations are performed in 37 cases (53.5 per cent) and direct fixation was employed in 103 cases (37.86 per cent). Wiring was done in twenty-one cases, pinning or nailing in twenty-eight cases, plating in forty-eight, and fixation by screws in 1. A pin and plate were used together in 14 cases and a ring plate was employed in one.

The fractures included fractures of the lower jaw, clavicle, humerus, olecranon, radius, ulna, metacarpal phalanges, femur, patella, tibia, and metatarsus.

The use of wire in the fixation of fractures has fallen somewhat into disfavor chiefly because for long time silver wire was employed which was not strong enough to hold the fragments in the fixed position and snapped about the twist point. The author uses thin brass wire which is stronger than silver wire of the same thickness and resists the

action of the tissues for as long as necessary. The wire is sterilized in the usual manner and just before it is introduced is passed through the flame of an alcohol lamp to make it more pliable.

In fractures of the radioulnar joint it is possible to accomplish all that is desired through the opened joint. The fragments are adjusted, fine spring pins are introduced, and the wound completely closed without drainage. The limb is then put up in a fixed position in a light plaster cast for three or three weeks.

In fractures of the acromioclavicular joint the fracture area is exposed, the small fragments are fixed temporarily, and a long resection pin is passed through the fragment and into the shaft of the bone through an external puncture wound. The wound is then closed and the arm fixed across the chest in light plaster cast which is worn for two or three weeks.

In none of the cases of fixation by open operation was there any complication due to sepsis.

J. C. WOODBRIDGE, M.D.

Edington, O. H. The Temporary Plating of Fractures of the Long Bones. *Bull. M. J.* 922 2, 114.

Fractures which most commonly require plating are those of the tibia, femur and humerus and less frequently those of the fibula, radius, ulna, and clavicle. In simple fractures it is advisable to operate as soon as possible after the X-ray examination is taken the skin will be free from laceration and the fragments can be adjusted more easily. A Murphy lever may be necessary to reduce the fracture. The ends may be held in position by a Lane forceps or Lowman clamp. In compound fractures plating should be delayed for a few days in order that sepsis may be averted.

The skin is prepared by an aqueous solution of phenol and the fracture exposed by straight or curved incision. The straight incision is used when the bone has good covering of muscle, while the curved incision is more suitable when plate is used. The periosteum is incised and stripped off the area of bone to which the plate is to be applied. A Lane plate with three or four holes and screws can be used. Spiders should be employed for immobilization but care must be taken to place the limb in such a position that function can be restored after the fracture has healed. The plate is removed in three or four weeks, when it has fulfilled its function as an internal splint. As a rule, loosening of the screws indicates that union is taking place. Splints are discarded after six weeks. A plaster cast is applied to the lower limb for four to six weeks. Consumption also may be employed in the treatment of non-union of fractures.

The author draws the following conclusions:

Open treatment should not be routine.  
Temporary plating is a reliable form of internal splinting in cases of fracture of the tibia, femur and humerus.

3. The skin incision should not come into contact with the fracture.
4. The periosteum should be stripped where the plate is applied.
5. A flat plate with Lane screws gives satisfactory results.
6. External splints are necessary for support.
7. Plates and screws should be removed 1 from three to four weeks.
8. Looseness of the screws indicates repair of the fracture.
9. Plating does not prevent delayed union or non union.

S. C. WOODBRIDGE, M.D.

Campbell, W. C. The Treatment of Ununited Fractures. *Am J Surg* 935, xxxv.

Campbell reviewed the records of 55 cases of fracture treated in his clinic during a period of five years. Sixty-three of these cases were treated by open reduction. This method is employed only when absolutely necessary. It was not used in any of the cases of fracture of the femur.

Campbell concludes that the increase in the number of ununited fractures in recent years is due to a difference in the type of the fractures, improper interpretation of the X-ray plates, too frequent attempts to reduce, and too frequent resort to open operation. However, when there is no sign of the formation of bony callus at the end of six months the fracture should be considered ununited and radical measures should be instituted. The author takes the following technique when open reduction is indicated:

A routine dissection is made to the point of fracture, and the fragments are pared so as to allow perfect coaptation. Great care is taken to preserve as much periosteum on the bone as possible. The attachment of muscle and soft tissues to the periosteum is not severed along the line of the incision. A broad area is exposed for several inches on each fragment, depending upon the size of the bone involved and the location of the fracture. With a sharp chisel, a flat surface is made on both fragments. Scar and osteoid tissue are reamed out of the medulla to healthy marrow usually from  $\frac{1}{4}$  to  $\frac{1}{2}$  in of each fragment. A broad flat graft including periosteum, cortex, and endosteum is taken from the tibia. The width and length of this graft depend on the part involved. With motor saw the graft is split longitudinally through the edge or small diameter into two parts. Strong outer plate consisting of dense bone of the cortex and an inner plate consisting of thin portion of the cortex with attached endosteum. The endosteum is removed from the inner half of the graft and a strip placed within the medulla to bridge the fracture as it is reduced. The bony cortical portion of the graft is held firmly to the bone across the point of fracture. Three or four holes are then drilled through the graft and bone and nails made from the cortical portion of the inner graft are used. A second graft of small size can be easily secured. Small particles of endosteum are

packed about the point of fracture and the flaps are closed tightly in layers.

In some of the cases Campbell cut a slot about  $\frac{1}{2}$  in wide in both fragments, inserted a mass graft edgewise into this slot, and then brought both fragments together. A tenuous bone nail were placed through the bone and graft. There is some encroachment of the graft on the endosteum but this is not sufficient to prevent satisfactory results. The fragments are tabulated so that no motion can be detected when the operation is completed but external fixation is always applied.

In order to complete the operation in a reasonable length of time a team of five is necessary: two to prepare the grafts and nails and three to carry out the technique. To prevent delay in union, reduction of the fracture must be accomplished with minimal trauma to the parts and the attempt in open reduction of fractures care must be taken not to destroy the natural osteogenic elements.

S. C. WOODBRIDGE, M.D.

Duff, D. The Treatment of Ununited Fractures by Bridge Grafts. *Brit M J* 9, 2, 5.

Open operations to bridge gaps in bones must be performed with the most scrupulous care as regards asepsis. Ligatures should be handled and tied with forceps, and suturing of the soft parts should be done only with a needle-holder and forceps. At the end of the operation the surgeon's gloves should be free from blood stains as they should not have come into contact with any part of the wound.

Duff has tried out various methods of treating ununited fractures, such as the wedge intramedullary inlay, the combined inlay and intramedullary graft, and comminution of the bone ends. Each of these methods can be used in certain cases, but the most successful results have been obtained with the inlay method or the combined inlay and medullary method. The graft must be long enough to overlap at either end by wide margins. A graft denuded of periosteum will unite and grow but it is much safer to use a graft with periosteum.

A wedge-shaped graft is unsatisfactory because it is impossible to obtain sufficient contact between it and the host bone without splinting the host bone for considerable distance. The inlay graft satisfies the requirements. The intramedullary graft is easy to insert into one end but difficult to insert at the other end. The thrust graft modification of the inlay should be employed only if there is no danger of flare up of sepsis. The combined inlay and intramedullary graft is the best, especially when the bone treated requires thick graft.

Duff uses phospho-bronze wire in suturing. I find shoulders help appose a double graft between the glenoid and humerus. In gap fractures of the tibia, the sliding inlay and ordinary inlay grafts give good results. In some cases a portion of the fibula may be cut off and placed in the gap of the tibia.

The after-treatment in these cases is important. The limb should be placed in a plaster cast in a



X-ray examination showed that the acetabular fragments had also become so perfectly replaced that all signs of the fracture had disappeared. This second case followed the classical course *via* reduction of the fracture following reduction of the luxation.

W. A. BARNES

Bradburn M. Fracture of the Femur. *Surg Clin*  
J Am 9 12, 1914

Bradburn gives briefly the essential points in the modern treatment of fractures of the femur and includes in his article pictures of a case in which the result was excellent if not perfect. He advocates the use of skeletal traction by means of toege, and states that he has never been unable to secure full length of the femur by this method. He uses the Thomas splint with the knee-flexion attachment and points out the advisability of moving the knee throughout treatment, this being easily accomplished with the apparatus described. The use of an ambulatory splint is desirable for at least three months after the patient is out of bed. Bradburn has found that skeletal traction is comfortable to the patient, and that the danger of infection about the caliper points is negligible. He reports 1 case of compound fracture in which he used Lane's plates combined with Carrel-Dakin treatment; the plates healed in position.

The complete article should be read by those interested in the successful treatment of fractures of the femur in order that it may be studied in conjunction with its excellent illustrations.

DR. W. C. HUR, M.D.

## SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Adams, W. R. Bone Grafting. *Surg Gynec & Obst.*  
9 3 1914, 97

Bone grafting is indicated to repair injured bone, stimulate osteogenesis, replace bone, and close keratoma or trephine openings in the skull.

Bone transplantation as first done in 1809 by Merrem. Since that time there has been many studies of bone transplants but surgeons are not yet agreed as to the ultimate function of the graft.

Various grafts are used, viz the homoplastic, heteroplastic, and tenuous grafts bled bone and hairy prep. The author regards the autogenous graft as the best.

In using the intramedullary graft Adams makes his incision 1 cm. to the right of the center of the bone. The graft is taken from the fracture. To obtain the exact width of the medullary canal, one end of the exposed fracture is tilted up. The turn saws are then set to this width. The graft is 4 or 5 in. long and does not extend closer than within 1 in. of the fracture. One end of it is pointed and the other blunt. The pointed end is inserted into the bed from which the graft was removed, and pushed into the medullary canal past the line of fracture and into the medullary

canal of the opposite end of the fractured bone so that it bridges the fracture.

Since the graft is the exact width of the canal it holds the fractured ends firmly and in good position.

JOHN VITCHELL, M.D.

Whitman, A. Observations on the Correction of Deformities of Long Standing. *J Am M*  
48 1913, 1722, 18

The author reports the case of a man 35 years of age whose legs became completely paralyzed following an attack of anterior poliomyelitis which occurred in his fourteenth year. On the right side there was a flexion contraction of the hip at an angle of 130 degrees and flexion contraction of the leg and thigh at an angle of 95 degrees. The foot dropped, but was not deformed. On the left side the flexion contraction was 100 degrees at the hip and 90 degrees at the knee. An amputation was performed in December 1911. A Souther operation in January 1912 and another in February 1913. On the other foot in February of 1913. In March, 1913, a Souther operation done on the other side and followed by the application of plaster casts with correction made in anesthesia. On May 20 the patient was able to stand. On May 23, 1913 he took his first step and on June 9 he walked with crutches.

The conclusions drawn from this case are as follows:

1. Deformities of indefinite duration may be successfully corrected.

Some patients require independent locomotion with the risk of repeated operation.

2. A single operation may be relied upon exclusively combined gradual mechanical and operative correction is necessary.

3. Functional use has direct influence on the deposit of calcium in bone.

W. C. ROBERTSON, M.D.

McWilliams, C. A. The Efficient Treatment of Acute and Chronic, Simple Traumatic Synovitis, Hemarthrosis and Hydrarthrosis by Repeated Aspiration and Immediate Active Mobilization Without Splinting. *Ann Surg*  
62 1915, 877

McWilliams does not approve of the classical method of treating synovitis of the knee joint by immobilization and its ordinary adjuncts. In its stead, he advises aspiration with a fine needle soon after the injury. When aseptic conditions are secured he has no fear of infecting the knee joint. He advises repetition of the aspiration as often as necessary to keep the joint free from fluid and reports every satisfactory case which was cured by the twenty-first day. The method described he regards as the best method of treatment provided there are no joint mice or dislocated cartilages.

The aspiration should be performed immediately before the ligaments become stretched. It results in a cure in half the time required by the old method.

To leave fluid in a knee joint is just as irrational as to leave fluid in the chest. Aspiration can be performed in the doctor's office and the patient allowed to walk home immediately afterward.

DENNIS W. CARR, M.D.

Hogg, C. Resection of the Distal End of the Ulna for Shortening of the Radius Following Fracture. *California Med J* 9:332.

Any fracture of the radius which results in shortening of the bones causes certain characteristic changes. The ulna becomes relatively too long and blocks ulnar flexion. Pronation and supination are limited. The hand cannot pull or lift in a straight line with the forearm.

To overcome these difficulties the author resorted to resection of the distal end of the ulna. The only cases suitable for this procedure are those in which there is definite protrusion of the ulna into the wrist joint sufficient to limit ulnar flexion of the hand with or without subluxation of the ulnar head. These are cases of fracture in which the shaft of the radius has been shortened or the epiphysis has been impacted or comminuted.

By the author's technique linear incision is made over the lateral side of the ulnar head and the head divided at the level of the articular surface of the radius. The triangular cartilage between the radius and the ulna has always been found fractured. The ulnar styloid is seldom fractured. It is important to preserve the radio-ulnar ligaments, but they are usually found ruptured. As a rule neither splint or cast is necessary. Physiotherapy including active and passive motion, is begun as soon as the soft tissues are healed.

Removal of the ulnar head results in partial loss of the bony groove for the flexor carpi ulnaris tendon. If subperiosteal resection is done, the soft tissues maintain the position of the tendon satisfactorily. Every effort should be made to preserve the function of the internal lateral ligament of the wrist.

The author reports four cases and summarizes his article as follows:

1. The operative technique is considerably simplified.

2. Immobilization is rendered unnecessary.

3. Rotation of the forearm and lateral motion of the wrist are more completely restored.

4. There is no possibility of non-union and less opportunity of infection.

5. The restoration of strength and cosmetic results are better.

JOHN MITCHELL, M.D.

Leit, A. T. Transplantation of the Tensor Fasciae Femoris in Cases of Weakened Gluteus Medius. *J Am Med Ass* 9:332.

The author describes the operation he devised to relieve the limp caused by weakness of the gluteus medius muscle via transplantation of the tensor fasciae femoris muscle into the outer side of the femur.

He emphasizes the fact that the tensor fasciae femoris is not only an abductor of the thigh but a very important flexor. It also holds the center of gravity of the body over the supporting leg when the other leg is raised from the ground. The technique of the operation is as follows:

The incision is begun at the antero-superior spine and extended backward and downward over the great trochanter and then downward along the course of the femur for about 3 in. The skin with the subcutaneous fat is reflected forward, exposing the fascia lata.

Anteriorly running downward from the anterior superior spine, the fascia lata becomes thin before it extends over Scarpa's triangle. Along this line the fascia is incised downward from the anterior superior spine to 3 in. below the great trochanter where it is divided transversely backward for about  $\frac{1}{2}$  in.

At about  $\frac{1}{2}$  in. below the great trochanter the fibers of the tensor fasciae femoris become inserted into the fascia lata.

The outer surface of the femur is next exposed about  $\frac{1}{2}$  in. below the trochanter by dividing the fibers of the vastus externus. A periosteal flap is

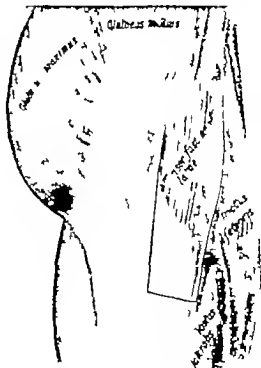


Fig. Normal anatomical appearance about the hip. The black line along the tensor fasciae femoris represents the incision made in freeing this muscle before transplantation.

position to prevent strain on the graft, and the next day window should be cut in the cast over the wound to relieve the pressure. As soon as the wound is healed this window may be filled with plaster. When the plaster is removed the limb should be supported by light braces and given light massage. When union is delayed without apparent cause further rest in a plaster cast and massage will sometimes result in firm union.

S. C. WOLSTENHOLME, M.D.

Van Hook, W.: *Fracture-Dislocations of the Humeral Head*. *Boston M & S J* 9, January 1960.

Injured joint cavities in which there are bone surfaces not covered by periosteum or cartilage can be successfully treated by the subcutaneous implantation of fat tissue. When such tissue is subjected to recurrent pressure as in joint cavity it becomes thinner, tougher, and more resilient and loses much of its oil and lymph-space distention. Predicted flaps are better than free flaps, but the latter soon become vascularized and serve very well. Dead spaces must be avoided and the distance between the joint ends must be decreased as much as possible.

When a small fragment without muscle attachment is dislocated in the shoulder joint at the time of fracture, the difficulty of replacement is great. In most cases of this type the fragment should be excised and a flap of fatty connective tissue interposed.

Van Hook reports the case of a woman 53 years of age whose shoulder was injured four weeks before she came for treatment. The X ray showed that a saucer like piece of bone had been broken from the head of the humerus and lodged below the glenoid cavity. The joint was opened, the detached piece removed and a large pedunculated flap of fatty areolar tissue from the adjoining soft parts pushed into the joint cavity and fastened with catgut between the injured humeral head and the glenoid. The arm was then dressed in abduction. The wound healed by primary intention. Massage was given later. After several months, motion of the shoulder joint was almost normal.

FRA. G. MURPHY, M.D.

Chrysomidis, M.: *Congenital Bilateral Forward Luxation of the Head of the Radius* (*Luxation de la tête du radius congénitale bilatérale*). *Arch de chir* 9, vol. 340.

The case reported by the author was that of a soldier 30 years of age who when a child fell on his left hand and several years later fell on the right hand. Since these falls the elbows had been stiff and the arms semiflexed. Roentgenograms showed bilateral congenital forward luxation of head of the radius.

Bilateral luxations of this type are found in 14 of thirty five cases of congenital luxation of the head of the radius collected by Ross, Karm-

son, and others. The condition is more common in males than in females.

The author's patient believed his malformations were due to his falls and could not be convinced that they were congenital. No other malformation was found in this case. W. A. BARNARD.

Knappp, H. B.: *Dislocation of the Semilunar Carpal Bone*. *J Am M Ass* 93, 1929, 99.

The entire surface of the semilunar carpal bone is articular except for slight roughness for the attachment of the dorsal carpal ligament. For this reason, and because of its uneven compression between the lower end of the radius and the os magnum, the semilunar bone is very completely dislocated in sudden forcible hyperextension of the wrist. In such hyperextension the sharp dorsal edge of the distal end of the radius shaves off the dorsal ligament of the semilunar and the semilunar is then crowded forward out of its resting place, its anterior pole being fixed by the anterior radiocarpal ligament.

Next to fracture of the scaphoid, dislocation of the semilunar bone is the most common injury of the wrist. The fingers are flexed and held rigid because of the pressure of the dislocated semilunar on the flexor tendons and the median nerve, and if the bone exerts marked pressure on the nerve, numbness and tingling result. Pain and swelling are localized anteriorly. An anteroposterior roentgenogram demonstrates the dislocated semilunar much closer to the plate than the other carpal bones, while the lateral view shows it more or less completely rotated forward. The hand appears shortened because the os magnum settles into the space left by the semilunar while the anteroposterior diameter is increased because of the anterior displacement of the semilunar bone. Occasionally the semilunar bone is palpable beneath the flexor tendons in the anterior wrist region.

Bloodless reduction preceded by the application of moist or dry heat for from three to twenty four hours should always be attempted first in both early and late cases. Under general anesthetic pressure should be made on the dislocated bone with the thumb while the wrist is palmar flexed. Extension and counter extension in the line of flexion will facilitate reduction. Stern advocates the use of the Thomas stretch in bloodless reduction.

If attempts at bloodless reduction fail, open reduction is necessary. Davis' double curved shank will be found very useful. With the wrist palmar flexed and with traction on the hand and counter traction on the arm, this instrument is slipped over the lower pole of the semilunar bone to hook and pry its edge under the os magnum.

The author considers it better to reduce the dislocation rather than to excise the bone, but if the dislocation is associated with fracture of the scaphoid, excision of the semilunar with the proximal fragment or all of the scaphoid gives the best functional result. ROBERT S. RANK, M.D.

Bradford, E. H. The Treatment of Congenital Dislocation of the Hip. *J Bone & Joint Surg* 923  
xx, 76

The end results in nine cases ten to twenty-five years after reduction by the open and the closed methods, are reported. Function was satisfactory in all except two. Both of the latter were cases of bilateral dislocations in one reduction was effected by operation, and in the other by manipulation. Several cases seemed to indicate that the anatomical cure is less perfect and motion is more restricted after reduction by incision than after reduction by manipulation. It is probable, however that in the cases in which operation was necessary the deformity was greater than in the others.

Congenital dislocation of the hip may now be regarded as curable but forty years ago there was no thorough and satisfactory method of treatment. Abnormalities which must be overcome by the surgeon are: shortened adduction and abductor muscles; contracted ligaments of capsule which act as a sling carrying the body weight from the neck of the femur; alteration in the shape of the acetabulum due to filling in by the adherent capsule and a flattened and twisted femoral neck. There are three steps in reduction: (1) the stretching or tearing of the resistant soft tissues, (2) the placing of the head opposite the acetabulum, (3) the reduction of the head into the socket through the contracted capsule.

Manipulative reduction can be made easier by mechanical apparatus. In traction apparatus used in a large number of cases at the Children's Hospital, Boston, a strong rod extends from the perineum to below the foot. Counter-pressure comes on the up-rights against the perineum. A V-shaped piece from these up-rights extends over the antero-superior spines and when clamped down holds the pelvis firmly. The leg is strongly abducted and stretched, and at the same time lever traction on the foundation plate of the apparatus is used to push the trochanter down and forward. Thus the head is forced through the stretched capsule and into the acetabulum.

The best position will necessarily be with the limb strongly abducted, as the reduced head is then pressed against the bone structure of the socket, while if the limb is adducted considerable part of the head lies against the weak cartilaginous rim. As soon as the retaining cartilaginous capsular ring has become sufficiently strong for weight bearing, the abducted position should be changed and the limb restored to its normal position parallel with the long axis of the body. If the period of cicatrization it is necessary that the great trochanter be kept in the plane of the cross section of the body rather than behind it, for in the latter position the torn ligaments connecting the ilium and the lesser trochanter become too short on healing and the restoration of the limb to its normal standing position will throw the head out of the socket into the so-called anterior position. Furthermore the trochanter in the frog position is behind the iliotibial band, and the return-

ing function of the iliotibial band, pressing on the great trochanter is not utilized and does not force the head into the socket as it does if the trochanter is in its normal place.

The length of time immobilization and other steps in the after treatment should be continued cannot be stated definitely but must be left to the judgment of the surgeon in each case. If with active use the hip remains in place for a year the cure is probably permanent. In rare cases, however there may be a relapse after several years.

Reduction by open incision should be reserved for cases of relaxed or distorted capsule which cannot be reduced by manipulation. Incision means a deep wound followed by dense cicatrization which may interfere with the functional result.

Osteotomy to correct the twisted femur is unjustifiable because the muscles adjust themselves to the new relation and the joint function becomes normal in spite of the twist.

As open operative measures also have their place the surgeon should be skilled in several methods of reduction and be able to choose intelligently the best method for each case. In the cases of younger children it is sometimes easiest to place the patient face down with the affected leg hanging over the edge of the table. Strong pressure can then be made on the trochanter while the leg is manipulated.

If the deformity is corrected before the child begins to walk an absolute cure can be expected.

WILLIAM A. CLARK, M.D.

Chauvin, E. and Hayem, L. Two Cases of Limited Fracture of the Acetabular Rim in Luxation of the Hip (*Deux cas de fracture limitée du sillon acétabulaire au cours d'une luxation de la hanche*). *Rev d'orthop* 9, 1933, 543.

Fractures of the rim of the acetabulum are rightly considered a complication of traumatic fractures of the hip. In 1880 Senn collected twenty-seven cases and showed how the fracture can be produced experimentally in the cadaver. Since then the authors have found only eleven other cases.

In this article two new cases are reported. The first was that of a man 43 years of age who was injured in an automobile accident. Physical and X-ray examination showed a coracofemoral luxation of the iliac type. The roentgenogram revealed also fracture of the rim of the acetabulum. The detached fragment belonged to the antero-inferior border of the rim and was displaced outward in the space between the neck of the femur and the ilium. Reduction of the luxation as easily effected. Operation to correct the displaced acetabular fragment was believed unnecessary as there was no functional trouble.

The second case was that of a man 56 years of age who was injured in a fall. Examination revealed back luxation of the hip. The X-ray showed also a fracture of the acetabular rim in the postero-superior portion. Reduction as easily effected, the femoral head resuming its correct position. A later

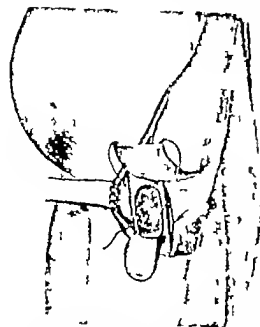


Fig. 1. Groove in femur and freed tensor fasciae latae with silk suture before insertion into the femur.

turned downward at this point, and groove going into the marrow is made about 15 cm long and 1 cm wide.

The free end of the fascia lata is then sutured with No. 181 suture silk and inserted into the groove by carrying the silk ends through holes drilled in the femur on each side of the groove. The knot is tied over the fascia in the groove, and the periosteal flap is turned back and sutured over the groove containing the fascia.

Before the suturing with silk is completed, the thigh is abducted about 30 degrees, when the fascia is seen to have moderate tension. The skin and subcutaneous fat flap is then turned back and sutured by layers to their original situation.

A plaster spica is applied from the waist to the ankle, with the leg in 30 degrees of abduction.

The postoperative treatment consists of simple superficial massage after two weeks and muscle training after four weeks. The patient is allowed to go about with the spica and crutches at the end of four weeks.

At the end of 10 months the spica is removed and an abduction walking splint applied, which the patient wears for six months.

The author has performed this operation about fifteen times with very satisfactory results in most cases. The Trendelenburg sign has disappeared and the lateral swaying of the body has decreased if it has not disappeared. The author states that when the lump is due to weakness of both the gluteus

maximus and the gluteus medius muscles, and the lump is due to weakness of the lateral gluteus muscles, transplantation of the tensor fasciae latae is not satisfactory. FRANK LYNN, M.D.

Meibum, T. S. The End-Result in Four Cases of Severe Destructive Injury to the Hip. *J. Am. Joint Surg.* 9:3, 22, 30.

CASE 1. In this case the upper end of the femur and acetabulum body were shattered and noted October 6, 1918. Healing had occurred by January 30, 1921 after many operations. The patient is able to walk with cane. There is good stability but 9 cm of shortening. There is no pain. Flexion is 40 degrees, extension to 30 degrees, adduction is about 105 degrees, and abduction to 165 degrees possible.

CASE 2. This was a case of infected compound comminuted fracture of the right hip due to a fall wound. After 4 years of draining and several operations the patient wore a long caliper splint for four months and then walked. The final result is normal passive motion except for loss of abduction, active flexion to 120 degrees, shortening of 6 cm, dislocated head and subluxation of the knee. The patient is able to walk several miles a day without ill effects.

CASE 3. In this case a shell wound of the upper femur and acetabulum required two years and six months to heal. The patient now has excellent range of motion, good stability and no pain. He walks with cane. Shortening amounts to 7.5 cm.

CASE 4. This is a case of loss of the upper end of the left femur, ankylosis of the left knee, and equinovarus deformity of the foot. When the hip healed there was practically normal passive motion, active flexion to 30 degrees, and abduction to 30 degrees. Shortening equalled 1 cm.

These cases demonstrate that a fairly satisfactory result can be obtained in cases of considerable loss of substance and prolonged infection of the hip joint, and suggest that extensive resection of the upper end of the femur in adults is justified for severely infected fractures and perhaps for tuberculosis or septic arthritis. WILLIAM A. CLARK, M.D.

Cotton, F. J. Knee Lesions and Operations Based on 100 Personal Cases. *Surg. Clin. N. A.* 9: 2.

**Synovitis.** This condition may result from blow or laceration of the knee with trauma or partial tearing of the internal lateral ligament. The author has never seen total tears of the internal lateral ligament alone. Immobilization of the affected knee by plaster of Paris or splints results in an early selective degeneration and trophy of the rectus portion of the quadriceps muscle and consequent laxity of the joint in addition to synovitis. The treatment suggested is careful massage of the joint and muscle to cause the disappearance of the fluid and maintain the tone of the muscle.

*Synovitis with demonstrable lesions* The case cited by the author showed crumpling in of the bone over a very small area of the adductor tubercle. The treatment consisted in immobilizing by splinting and strapping, and massage. After the twelfth day the effusion had almost entirely disappeared and the condition of the knee was very much improved. The patient is now able to walk with crutches.

*Chronic or subchronic synovitis* This is usually due to neglected synovitis in which too long immobilization and lack of massage and muscle exercise have produced a loose joint. The treatment consists of massage, active exercise of the quadriceps, the use of a Thomas heel, and strapping. The prognosis is usually good, but a cure may not be effected until after several months. For cases which do not respond to this form of treatment, the author suggests a tomos draining into the intermuscular spaces of the thigh.

*Chronic toxic synovitis* This condition, which is very rare, is a chronic symmetrical synovitis due to adolescent hereditary syphilis. A case reported showed marked effusion, slight capsula thickening, and limitation of motion due to fluid. There was no local heat, tenderness, or pain. The X-ray examination was negative. Very marked improvement followed arsenobenzol treatment.

*Arthritis with fusion* Cases of arthritis with effusions are often mistaken for cases of synovitis. They may be of the active infectious or mild, recurrent chronic type. Very careful massage, heat, and motion are usually beneficial. In the more severe cases traction with Thomas splint or caliper should be continued for months.

*Mild dry arthritis* In this condition there is usually no effusion in the knee. Strain is due to overweight with or without knock knees or arthritis, but usually with pronation of the feet. Relief is given by the Thomas heel, adhesive strapping, and supporting bandage on the knee. Reduction of about 20 lbs. in weight ensures permanence of the cure.

*Adhesions within the joint* These are usually due to a fracture into or adjacent to the knee joint, or are the result of arthritis. In some cases the breaking up of adhesions by manipulation under anesthesia followed by massage is sufficient, but in more severe cases open operation to free an adherent patella is necessary. Occasionally arthroplasty is indicated.

*Adhesions outside of the knee joint* Such adhesions are usually due to fractures of the femur. Brannstrom's force has not been satisfactory. The best treatment is early active assisted motion and massage.

*Simple cartilage dislocation* A sign of simple cartilage dislocation is locking of the knee joint so degrees short of full extension, with severe pain when extension beyond this point is attempted. Another sign is palpable cartilage on the outside of the knee level of the joint or a point of definite tenderness

just in front of the midjoint line on the inner side. Cases in which locking has occurred only once should be treated conservatively. The cartilages should be removed only when they become dislocated frequently.

*Fringe pinching* This condition may be confused with locking due to dislocated cartilage. Operation is indicated in both conditions only if the cartilage is doubtful. The fringe of the ligamentum alaris should be inspected and removed also if necessary.

*Cartilages with secondary joint changes* The patient whose case is cited gave a history of injury to the knee joint and could bear no weight on the knee without a caliper splint. Flexion to 5 degrees as possible without pain, total flexion was 50 degrees. The joint was tender on palpation and showed abnormal lateral mobility. Large fat pads and both semilunar cartilages were removed. In some cases splint is worn to maintain the stability of the joint. The operation is generally beneficial.

*Fall as arthritis* In this condition there is a general thickening of the postpatellar pads with overgrowth of the subsynovial fat tissues. The condition may be due to hypertrophic arthritis, synovial tuberculosis, osteochondritis, or repeated trauma. Loose cartilages are removed together with villous hypertrophic growths including masses of the ligamentum alaris. The operation results in considerable improvement.

*Osteochondritis dissecans* This condition is usually the result of a dissecting process in the cartilage of the femoral notch which gives rise to free bodies in the knee joint causing arthritic changes. Operative removal gives good results.

*Free bodies or loose pieces* The author ascribes joint mice to the loosening and growth of fragments of chipped bone within the joint due to broken osteophytes or osteochondritis. There is a history of locking and synovitis. Operative removal usually results in cure.

*Contractures* Joint contractures are usually due to contracture of muscle or scar tissue outside the joint, the result of fracture or trauma near the joint, arthritis, etc. In some cases the treatment consists in tenotomy of the involved tendons, correction by means of gradual extension with Thomas splint, physiotherapy, etc.

*Ruptured ligaments with and without dislocation* If luxation is present it is easily reduced if no arteries are torn. Rarely all the ligaments are ripped loose. The most important structures are the posterior cruciate ligament and the internal lateral ligament. If there is greater involvement, operation is indicated, although most of the methods give only fair results. The author's best results are obtained by reconstructing the lateral ligaments from fascia lata at such a slant as to limit the luxation without interfering with normal motion.

*Chronic patellar luxation* The patella is luxated outward by flexion either permanently or recurrently. The condition is said to be due to malformation of

the femoral condyles or to knock knee. In the author's operation a long lateral incision is made in and outside of the patella and another in the ligamentous capsule of the outer side of the patella. A similar but shorter incision is made on the inside. The patellar tendon is split in half and the distal end separated and passed under the intact half and sutured into the lower end of the inner cut of the capsule. The rest of this cut is overlapped  $\frac{3}{4}$  in and sutured. Good results were obtained in the case cited.

**Patellar fracture.** Fracture of the patella is usually caused by direct violence. The treatment consists in open operation, suturing through the solid tendon at the side of the patella and the lateral tears and torn tissues in front. T sutures are placed in front of the torn bursa to avoid skin adhesions. Motion is begun after immobilization by strapping for three weeks. The results are satisfactory.

**Ruptured quadriceps tendons.** This is more common in older persons and in males. It is mechanically equivalent to fracture of the patella. Operation consists of suturing the tendon with kangaroo tendon after freshening the surfaces. Mobilization for three weeks should be followed by massage and active motion. After six weeks the patient can get up.

**Rupture of the patellar ligament.** This is a very rare condition which is equivalent to fracture of the patella. Suture is indicated. Convalescence is somewhat longer than in cases of fracture but the same functional results are obtained.

**Amputation of the tibial tubercle.** Usually the tip of the long epiphyseal tongue which runs down the patellar tubercle is torn away. The condition occurs usually in boys between and 8 years of age. It is considered similar to Osgood Schlatter disease.

**Non-infectious arthritis destructive circumscribed.** There is usually roughening of the cartilage with the presence of synovial villi. Plastic excision resulting in ankylosis gives good function.

**Tuberculous arthritis circumscribed.** Radical incision for this condition usually results in ankylosis of the affected joint and healing of the process.

**Joint for use and deformity excision.** Excision is advised for cases of old fractures in which conservative treatment has been of no avail. A good functional result is obtained after ankylosis.

In certain new severe condylar fractures the author has obtained good function by remodeling the condyles to a smooth surface and removing spurs.

**Old injuries.** Plastic remodeling. Two cases are cited in which malunion of the condyles of the femur resulted in limitation of extension of the leg. The projecting portion of the femur was removed and the curv of the joint surface reconstructed sufficiently to permit complete extension.

**Arthroplasty.** The results of arthroplasty on the knee thus far have been poor. The results of Palf operation have been more satisfactory.

**Osteotomy for deformity.** Deformity of the knee joint such as knock knee is due to irregular epiphyseal growth following infection, fracture, etc. Subcutaneous osteotomy is performed at the point of maximum deformity immediately above the femoral condyles or below the tuberosities of the tibia. The deformity is corrected and the limb immobilized in cast for six or seven weeks.

**Septic bursae.** This condition is due to infection following trauma. Operation consists of free excision and drainage.

**Septic joints.** The treatment consists in opening the joint and irrigating with common salt solution 15000 for fifteen minutes, the joint then being closed. This is usually sufficient unless there is involvement of the adjacent structures.

**Charcot joints.** This condition usually occurs very early in locomotor ataxia. The author has seen improvement following intensive antisyphilitic treatment. The knee joint should be supported by a caliper splint.

REYNOLDS S. REED, M.D.

Cook, A. G. Stern, W. G. and Ryerson, E. W.  
Report of the Commission Appointed by the American Orthopedic Association for the Study of Stabilizing Operations on the Foot. *J Bone & Joint Surg.* 1923, 52, 35.

The Commission found that a foot ankylosed in moderate calcaneus results in a heel walking with slight lump and gives a fairly serviceable foot. A moderate equinus is much better as with this condition the patient walks on both the heel and the sole, lumping is absent or slight, and the raising of the heel lengthens a shortened leg.

The transverse horizontal section of Davis, the open arthrodesis of Hibbs and others, and the Whitman astragulectomy result in a now and simplified ankle joint the motions of which are controlled by bone balance independent of muscle action. The first two operations cause ankylosis of the tarsal bone and displacement of the foot back and on.

but is left of the astragalus, the foot being placed in moderate equinus. The Commission prefers (1) the astragulectomy of Whitman (2) the open operation of Hibbs and (3) the transverse horizontal section of Davis.

Persons with paralytic talipes calcaneus talipes calcaneocavus, and flail or dangle foot, club or tilt out, varus or valgus are suitable subjects for astragulectomy and transverse horizontal section. These operations are not indicated when the calf muscles are active.

In cases in which there is rigid heel cord the astragalus and os calcis are in comparatively normal position and the entire drop is confined to the anterior portion of the foot. Large edge of bone is removed from the head of the astragalus and the posterior articulating surface of the scaphoid. Ankylosis results in a stable foot which is little shortened but has good lateral and ankle motion.

The deformities coronal found in varus or valgus can be corrected by removing the superfluous

portions of bone when arthrodesis is effected in the various joints of the tarsus separately. In order to maintain muscle balance the necessary tenotomies and tendon transplantations can be done at the time the bone balance is corrected. Of the 250 feet examined by the Commission last year a great majority had been subjected to tenotomies and tendon transplantations, but all but a tabulating operation ultimately. This finding might suggest that tabulating operation should be done in the first place, but it must be borne in mind that only cases in which tendon transplantation failed were examined.

The Commission considered also the various methods of treating partial and total paralysis of the dorsiflexors of the foot.

1. Arthrodesis of the ankle joint by excision or by graft. This procedure usually fails to cause ankylosis if it is performed before the age of 4 years. The external malleolus should be fractured and displaced inward to bring the three bones into close approximation. Most patients were dissatisfied

with the result, chiefly because of the increased strain thrown upon the mediolateral joint and because they experienced difficulty in walking up and down hill and putting on and removing their shoes. The latter difficulty was easily remedied by the wearing of shoes laced down to the toes. Lexer's method of driving an autogenous or heterogenous peg up through the os calcis and astragulus into the tibia fails because the intra-articular portion of the peg usually becomes absorbed within a year.

Silk ligament suspension from the tarsus to the tibia. This method is not recommended for young children as the silk may cut through the bones of the tarsus and the unyielding cords cause severe distortion and disability with the growth of the foot and leg. Good results were obtained in some cases operated upon in early adult life, but in others either res or valgus occurred. In a few cases the silk caused suppuration for a long time after the opera-

tion. Therefore the use of silk ligament should be restricted to carefully selected cases of patients over 5 years of age.

3. Tenodesis by the method of Putti, Gallie, or Codrville. This procedure may be used on children under 5 years of age. In some cases good results have been obtained, but there is considerable doubt as to whether the weak, paralyzed tendons can hold up a drop foot throughout life. The Commission reserves its decision regarding the method until a greater number of its results have been studied.

4. Suspension of the foot by strips of fascia lata or the fascia of the leg. In the few cases studied by the Commission the results have not been sufficiently convincing to warrant recommendation of this procedure.

5. Excision of diamond shaped pieces of skin or skin bone flap in the dorsum of the ankle joint. Only temporary benefit results.

6. Astragalectomy. This operation has a distinctly beneficial effect in drop foot and especially in flat foot, the results being sufficiently good to warrant its use in selected cases. None of the operative methods considered can be confidently recommended as a standard procedure. Latent deformities of paralytic feet are far more disabling and more frequently require correction than simple drop-foot.

7. The use of drop foot braces, such as elastic straps fastened to the shoe spring-wire supports with a coil at the sides of the heel and the flat spring extending along the sole and up the back of the leg. These are all useful and comfortable.

The Commission urges that tendon transplantation be almost always supplemented by stabilization of a sufficient number of the smaller joints of the foot to prevent or correct all tendency to varus or valgus deformity, such deformities being of much greater importance than drop foot.

RUDOLPH S. REICH, M.D.

## SURGERY OF THE SPINAL COLUMN AND CORD

Gruget. Lateral Subluxation of the Third Cervical Vertebra on the Fourth. (*Subluxation latérale de la troisième vertèbre cervicale sur la quatrième*). *Arch. franç. helps d. chir.* 9. xiv. 939.

It is believed by many that incomplete luxation of the cervical vertebra is an anatomical impossibility. Gruget, however, has treated such a condition in a man 20 years of age. The result of fall.

The signs observed about a week later were: (1) inclination of the head to the left and slight right rotation resembling torticollis; (2) elevation of the left and depression of the right shoulder; (3) marked curvature of the spinal column, the convexity being on the left side in the region of the lower dorsal vertebrae.

Lateral displacement of the third vertebra on the fourth cervical was clearly indicated in an anteroposterior roentgenogram, the interarticular line

appearing oblique from above downward and from right to left. This was a case of the "incomplete luxation" described by Cyriax, and the minor displacement described by English writers.

Continuous extension for several days was followed by cervical extension and traction with the head of the bed raised. After the fourth day the patient was laid flat in bed and manual reduction was attempted. This was successful. The patient was then kept in extension for forty-eight hours. When he was examined three months later his condition was normal.

W. A. BRIDGES

Landispecker H. L. The Treatment of Painful Affections Involving the Cervical Vertebrae. *California State J. M.* 9. J. xxi, 3.

The author classifies cases of painful affections involving the cervical vertebrae into three groups:



The first group includes the most severe injuries and inflammations, such as fractures, dislocations, bone tuberculosis, and syphilis. Immobilization is the treatment indicated.

Group 2 includes the cases of arthritis. These, search for local infections, should be made.

Group 3 includes the baccic cases, in which the cause is unknown.

After the diagnosis has been made, adequate treatment should be given to restore maximum function. Rest is essential. Improvement of the tone of muscular and ligamentary tissue is hastened by local hyperemia. Movement should be attempted early. The treatment should be completed by training in carefully selected active exercises. Too often fixation alone is carried out, and no attempt at restoration of function is planned.

JOSEPH MITCHELL, M.D.

Vanderput, E. A Case of Luxation-Fracture of the Cervical Spine (A propos d'un cas de luxation fracturée du rachis cervical). *Arch. f. chir. inf. de la p.*

The author reports the case of a man who sustained a cervical luxation fracture in a diving accident and died four days later. The accident was followed by immediate quadriplegia. The paralysis of the arms was of the radicular type. Sensation remained normal in the head and in the first four segments of the cord but was decreased in the fifth segment and lost below the sixth. Other sequelae of the injury were total abolition of the tendon, osseous, and cutaneous reflexes, retention of urine and feces, and priapism. Meningeal punctures showed bloody fluid. The clinical picture was that of a quadriplegia due to an indirect injury to the cord in diving especially the sixth segment. The X-ray showed fracture of the fifth cervical vertebra. The rapid evolution of the clinical phenomena indicated that operation could be useless. At a autopsy the fifth vertebral body was found detached in front and luxated backward.

In cases of injury of the cervical cord such as this the probability that the patient will survive is so slight that surgery is not justified. In injuries of the dorsal and lumbar spine early operation may be advisable as there is some chance of obtaining a condition of medullary automatism. Whatever the site of the injury, a simple decompression may be done if the general condition permits it and infection can be prevented. W. A. BRIDGEMAN

Girdlestone, G. R. The Place of Operations for Spinal Fixation in the Treatment of Pott's Disease. *Brit. J. Surg.* 9: 5-37

Girdlestone reports fifty cases of operative spinal fixation in Pott's disease which combined with the fifty cases he had previously reported, gives authority to his conclusions. He emphasizes the fact that the operative fixation of the spine is only part of the conservative treatment of Pott's disease, and suggests that many of the criticisms brought against

operative fixation are due to the fact that cases have been treated by operation without proper splintage without open methods, and without adequate rest or sufficient time.

He divides the angular kyphoses into two elements: (1) the telescoping and crowding together of the dorsal process, corresponding to the amount of destruction of the bodies, and (2) the inflexion or falling forward of the segment above until it regains support from the solid vertebra below. He points out that spinal fixation is always posterior and does not replace the bodies of the vertebrae which have been lost from the effects of the disease. The only function of external fixation is that of splinting the diseased area until rest and time can heal the disease in the bodies by disintegration.

Girdlestone discusses the different methods described and advocated by Calot, Hubbs, Albee, De Quervain, Ombredanne, Tobliac, Gaffie, and Robertson, Hey Groves, Hooms, and Calvé, mentioning in particular the fact that De Quervain and Hooms found that after healing had occurred, grafts placed in the spaces of a dog's vertebrae from which one of the bodies had been excised supported

eight of 40 kgm. applied to the centers above the defect.

In seventy-five of one hundred cases Girdlestone used Albee's method of applying graft from the tibia to the split spaces or to the bared laminae. He prefers the former. In five cases he employed osteoplastic methods. He used mechanical or motor saw to cut the bones. Ten patients died within a week, six died later, one from continued cancer and six from general tuberculosis or some other condition.

Ninety-four of the cases were clean cases but six of them presented dirty spinal stages. Girdlestone lays great stress upon the fact that internal fixation must not be depended upon for fixation until at least three or preferably six months after the operation. He credits his gratifying results to the use of what he calls "turning case," molded plaster cast of the anterior half of the body made for the particular patient before operation and applied whenever the patient is turned from his back. The operation is done with the patient lying prone in this turning case so that no stress is placed upon the graft until it has healed completely.

He then concludes that operations for spinal fixation are in no sense radical. External splintage of the spine must be maintained continuously before operation during the operation, and after

and until firm stability of the affected section is assured by the restoration to stability of the bones and ligaments of the part, coupled with the strength of the graft or osteoplastic union. Girdlestone hands the operation has been free from danger in the cases of adults and has given good structural stability but in some of the cases of children the graft has been absorbed and in certain others death has occurred. Therefore he concludes that in adults posterior spinal fixation is reliable and has

great value but in children it is less reliable and at the same time less needed and therefore seldom if ever indicated.  
Dennis W. Cramer, M.D.

Cahill J. and Galland, M. Osteosynthese bei Pott's Disease (Osteosynthesen bei Pott's Disease dans le mal de Pott) *J. d. chir.* 9. 22. 385

The authors discuss the indications and contra-indications for the treatment of Pott's disease by the use of bone transplants.

Operative interference is never indicated in tuberculous disease of the spine in children because the classical treatment gives excellent anatomical and orthopedic results. Further the operative treatment does not permit the patient to be played about and the bone graft opposes a solid anatomical union of bone and the establishment of therapeutic correct lordosis.

In adults, operation should be restricted to those cases in which the tuberculous process has been arrested. In short, for patients not of the laboring class the classical methods of treatment are best. For those of the poorer classes bone transplants may be used in order that the patient may more safely carry on his occupation without recurrence.  
Loyal C. Davis, M.D.

Wheeler W. I. C. Operation as Part of the Conservative Treatment of Pott's Caries. *Practitioner* 922, 115, 34

From an operative experience of twenty-four cases the author concludes that the bone-graft operation to cause ankylosis in tuberculous spine is advisable and in the cases of adults but unnecessary if not contra-indicated, in children. In the cases of adults early operation is advisable unless the patient can give ten years to absolute rest and can obtain the best orthopedic care and training.

The kyphosis cannot be materially reduced by operation but an acute angle may be rounded by cutting off some of the prominent spinous processes. Correction by pressure may be tried but the use of much force is dangerous.

Abscess is not a contra-indication. In fact, one of the most surprising and gratifying features in the treatment of spinal caries is the rapid disappearance of abscesses after fixation of the diseased segment by bone graft. Paralysis also rapidly disappears in many cases after the operation, and is regarded as a strong indication for surgical treatment unless there is early response to conservative treatment.

Experience has shown that sepsis is not much to be feared. When it does occur the graft seems to live through it and ankylosis occurs just the same.

Bone grafting in the spine shows a higher percentage of successful results than similar operations on the long bones. This is probably because the site of the graft in the spine is well removed from the diseased portion. It is thought that the grafts are not absorbed and replaced. They become less dense

for a while but roentgenograms made about six months later show them to be more dense than before.

In the cases reviewed the Hibbs operation was done only once. In the others a modified Albee technique was used. Rib grafts were employed in ten cases and tibial grafts in the others. Instead of splitting the spinous processes to make the bed for the graft, the sides of the processes were denuded of periosteum and the bone surface gouged with file. The graft was then laid against this raw surface and the soft tissues were sutured over it.

The after treatment consisted in support on frame in bed for three months, then limited freedom with a spinal brace and gradually increased activity. Most of the patients were able to go back to work at the end of 3 years.  
William A. Clark, M.D.

W. H. J. O. Crush Fractures of the Spine. *J. Bone & Joint Surg.* 9, 3, 22, 8

This article is a detailed statistical study of eighty-two cases of crush fracture of the spine.

Fractures in which hyperflexion or hyperextension of the spine is the causative factor, as in a fall from height, driving accidents, or the falling of weight on the back, are located in regions where the fixed portion of the spine meets a movable portion. Sixty-four per cent of all fractures occur in the first and second lumbar vertebrae and 3 per cent in the other lumbar vertebrae.

The author found that in the absence of an evident paralysis the diagnosis of fracture was not often made previous to admission to the hospital. In the forty-seven cases in which the correct diagnosis was not made paralysis was present in only one, while of the twenty cases in which the diagnosis as correct 75 per cent showed paralysis.

The complaint of 85 per cent of the patients was pain at the level of the fracture. Pain is a deep pressure over the lamellae in the spine is a fairly constant sign. Deformity is invariably present at this site unless the fifth lumbar is the vertebra involved, when increased lordosis is present. Limitation of motion is present in every case and in vast majority limitation of hyperextension is by far the most valuable sign of fracture.

In examining fractured spines, especially in late cases, point to which the upper and lower fragments pivot will be found when the patient bends laterally. This is at the site of the fracture and will be point around the lamellae in the spine.

In the treatment of the lower fragment, the vertebra below the fractured vertebra, is fixed by fastening the lower extremities in a spring frame resting on the side bars of the hospital bed and superimposed over it lower two thirds. When the frame is adjusted so that it extends to the level of the fractured vertebra, supporting the entire lower fragment, it is raised by means of screw and the upper fragment is allowed to bend posteriorly to the bed.

When correction has been continued on this bed as long as necessary, new type of body cast is applied.

This cast is applied on a horizontal frame with bar pressing forward and the deformity protected by thick pad of saddle's felt, while the upper fragment of the dorsal spine is held horizontal and the lower fragment is thrown forward and as much as the angle of the deformity. The weight of the patient's body then tends to throw the lower fragment backward

into an oblique window which is cut on the dorsum of the cast with its upper edge at the apex of the deformity.

This cast is worn from six to twelve months, depending upon the patient's age and the duration of the deformity. Internal bone fixation is as necessary. D. and R. TILSON, M.D.

## SURGERY OF THE NERVOUS SYSTEM

Abramson, H. I. *Injuries of the Nerves of the Arm (Ueber Schädigung der Armaerven)*. *Leib. f. Chir. u. Orth. 305*

The author differentiates between primary and secondary lesions of the nerves, the former due to fractures and other injuries and the latter to pressure from callus formations, neuromas, etc. Twenty-five per cent of all nerve injuries in the arm are lesions of the radial nerve. The median ulnar nerves are involved in only one and a half per cent respectively. Secondary lesions are more common in children than adults, especially in fractures of the distal humerus and near the elbow. The median and ulnar nerves are less exposed to injuries from fracture. Nerve lesions occur frequently also in dislocation of the humerus and elbow. Among the laboring classes the open primary lesions due to puncture injuries are the most common. Injuries in children a greater number of subcutaneous lesions are observed.

In the other operation every local wound should be examined under a microscope if an injury of the nerve is suspected.

Three cases are reported.

Sever, (7)

Leriche, R. *The Indications for Posterior Radicotomy Based on Twenty-Five Cases (Des indications de la radicotomie postérieure à propos de vingt-cinq observations)*. *Ann. Chir. u. 115, 647*

Seventeen of the twenty-five cases discussed in this article were first reported in 1914. In these seventeen cases there were four deaths. Three of the deaths Leriche believes could have been prevented by better technique. All of the other patients operated upon recovered with only a few and slight postoperative complications.

Intradrural radicotomy is one stage is not hazardous or difficult operation but it takes much time. In Leriche's twenty-five cases it was performed for the following indications: crises of tabes seven, radiculitis, two pachymeningitis, one pain due to neoplastic compression, three painful stumps, one rebellious zona, one Parkinson disease, three sclerotic plaques, one and spasmodic paralysis, five.

Four of the operations were cervical radicotomies, nine were dorsal, five were lumbar and seven along the terminal cone. Twenty-one of the operations were intradrural and four were extradural.

Leriche did not observe the definite disappearance of tabetic crises in any of his seven cases of tabes in

which radicotomy was done. Neither did he find the operation always beneficial in cases of radiculitis. Rebellious zona seems a good indication for posterior radicotomy. In cases of painful stumps Leriche has had one good result and one failure. For this condition he believes radicotomy should be the last resort, chordotomy being preferable.

In cases of neuritis due to neoplastic compression radicotomy sometimes gives excellent results and at other times only temporary benefit. It is indicated when the tumor is clearly localized, but in cases of poorly localized tumors it is less efficacious.

In spasmodic paralysis, and especially in little disease section of the root should not be done if there is any cerebral sign or the spasmodic phenomenon are evidenced particularly in the upper limbs. In the less severe cases great improvement can be obtained if the operation is performed at the age of 3 or 4 years.

The results of the operation are particularly late in cases of the spasmodic paralysis following certain types of meningitis.

In coarctation Leriche states that there need be no fear as to the stability of the lumbar sectioned spinal column. A. A. BERNARD.

Jones, J. *Contributions to the Surgery of the Sympathetic Nervous System (Contribution au Sympathéctomie Spinal)*. *Chir. u. 115, 647*

In three cases of dry gangrene of the leg Jones resected from 5 cm. to 20 cm. of the plexus peroneus from Hunter canal upward to Scarpa triangle and even the plexus femoralis profundus. Because of the resultant paralysis amputation much more of the leg as as well as in usually possible. There was no recurrence.

In cases of cystic crises in tabes Jones exposed the splanchnic nerves and the semilunar ganglion according to the method worked out by Coombs. After laparotomy and division of the gastrohepatic ligament the liver (the hepatic lobule) and the lesser curvature were drawn upward and down to expose the inferior vena cava and on the left side under the peritoneum the great splanchnic nerve. The latter was then followed upward to the diaphragm and extirpated with Lobstein's ganglion by means of a pair of scissors. Laterally to and behind the cava was found the lesser splanchnic nerve. This was treated in the same manner. Below these two nerves lay the right semilunar ganglion. This ganglion was extirpated

and the efferent fibers of the solar plexus and the petrogastrie nerve were divided.

In a case of glaucoma and trigeminal neuralgia Juarez performed a unilateral cervicohumero-cervico-pathectomy by Jonnesco method with excellent results.

STOLWORTZ (Z)

Kleinschmidt O. Sciatic Phlebalgia and Sciatic (Ueber Phlebalgia sciadica und Ischias) *Kl. Wochenschr.* 9 1, 790

According to Reinhardt sciatic phlebalgia may be caused by varices within or on the surface of the nerve and involving its entire course or only a certain section.

The clinical symptoms are gradually developing pain in the foot and calf fatigue and cramps, which disappear at night and when the leg is elevated. In

contrast to this, the pain of sciatica is severe appears suddenly first in the gluteal region, and is aggravated (Lasegue) rather than decreased when the leg is elevated; in addition, there are neuritic symptoms (sensory disturbances, trophic and pressure points). Similar symptoms may be produced by secondary changes in the blood vessels, to wit the sciatic nerve due to thrombosis, phlebitis and advancing sclerosis.

The author reports 2 cases of the latter type. In one, the sciatic nerve was enclosed in an indurated sheath penetrated by thrombosed vessels, while in the other there were varices around the tibial and peroneal nerves which became inflamed and caused severe cramp-like symptoms in the region of these nerves. Both patients were cured by operation.

RISUM (Z)

## MISCELLANEOUS

### CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Krausz W. A Case of Papillomatosis of an Abdominal Cavity (Ueber einen Fall von Papillomatosis intra-abdominalis) *Frankfurt Ztschr. f. Path.* 9 271, 59

This article is a detailed histologic description of a papillary tumor the size of a fist, which developed during the course of twenty years in an abdominal cavity of the buttock in a 40-year-old woman and was removed at operation. Especially worthy of notice was the markedly typical development of epithelium upon the papillae, such as traced by the author to the ingrowth of the epithelium of the skin into the abscess cavity. The most important factor in the development of the papillae was the epithelium.

Healing took place by first intention without recurrence or the formation of metastases, according to later reports from the attending physician.

MEYER (Z)

Wassmer E. The Elective Fixation of Radium Colloidal Substances on Embryonic and Neoplastic Cells and Its Importance in the Diagnosis and Treatment of Cancer (La fixation élective des substances radiumcolloïdales sur les cellules embryonnaires et néoplasiques: son importance dans le diagnostic et le traitement du cancer) *Bull. Acad. de méd. Pa.* 9 1071, 46

Wassmer the director of the Swiss Radium Institute at Geneva, reports a new method for the diagnosis and treatment of cancer which consists in the elective physicochemical fixation of radium-colloidal substances on embryonic cells in general and especially neoplastic cells.

Experiments carried out for some time showed that, when introduced into the circulation of pregnant guinea pigs the toxic compounds of radium-colloidal substances become electively fixed on the

embryo. The fixation was demonstrated by curiographic picture of the embryo. The author credits this elective fixation in clinical cases of primary tumors and metastases by injecting radium colloidal substances both intracranially and directly into the tumors and then examining the curiographic images of the tumors.

A case reported was that of a woman with an endothelioma of the left parotid region with metastases in the preauricular glands. Intravenous injections followed by local injection into the glands enabled the author to obtain curiographic pictures of the primary tumor and a second picture showing metastases at the base of the brain. Further injections were followed by decrease in the size of the tumor and total clinical disappearance of the metastases.

Wassmer states that the method of injecting radium colloidal substances is entirely new. Because of the affinity of the toxic and colloidal particles for embryonic and neoplastic cells it makes possible further study of the biological chemistry of young and neoplastic protoplasm. It is a curiographic method which permits early diagnosis of deep neoplasms and their metastases. Because of the physicochemical fixation of the radium colloidal particles on neoplasms and their metastases, it brings the curative agent into the very center of the neoplastic and embryonic cells.

For these reasons the author believes the method opens up a new and very fertile field in the treatment of cancer.

The patient whose case is reported ultimately died of cerebral hemorrhage. Wassmer is able to confirm the complete disappearance of the tumor in the parotid region and of the metastases in the neck, but believes it is possible that the treatment by six intravenous and three local injections of radium colloid may have favored the rupture of the cerebral artery which caused death.

W. A. BRUNN

Bullock, F. D., and Curtis, M. R. A Transplantable Metastasizing Chondro-Rhabdomyosarcoma of the Rat. *J. Cancer Research* 9: 2, viii, 95

With the exception of certain nixed tumors of the testis, ovary and kidney neoplasms containing striated muscle are very uncommon in man, and only a few have been found in a rat. The rat tumor herein reported is apparently the first rhabdomyosarcoma in a rodent to be recorded.

The growth was found in a black, adult female rat between 15 and 19 months old, one of a group which had been experimentally infested with cysticercus fasciolus. When first observed the tumor was about the size of a pea. In the first few weeks it showed practically no increase in size, but at the end of 10 months, when the animal was mated it was slightly larger. The rat later gave birth to 11 young, only one of which also reared. During gestation the tumor grew rapidly.

One month after gestation a fragment of tumor was removed surgically and used for the subcutaneous inoculation of ninety-three rats. The rat survived the operation thirty days, during which period the tumor grew rapidly. Microscopically the growth showed a rather complex structure varying in different parts. It was composed partly of muscle cells and fibers and partly of small round or polyhedral cells suggesting embryonic cartilage cells. These two types of cells occurred separately in certain parts of the tumor but in general were freely intermixed one on the other predominating.

Scattered through the tumor were large and small islands of cartilage. The central parts of some of these islands consisted of differentiated cartilage cells, while the cells comprising other islands were solely embryonic in type. The cartilaginous islands showed a marked tendency to necrosis. Embedded in the tumor were several small trabeculae of osseous tissue. The tumor was rich in blood vessels consisting largely of dilated capillaries.

Transplantation of the tumor was successful and within the eighteenth generation. It is of initial difficulty of propagation this tumor resembled carcinoma rather than a sarcoma. Of the grafts introduced subcutaneously into the ninety-three rats of the first generation only three produced tumors and only two tumors were obtained from the forty-eight rats of the second generation. In the third generation however the inoculation was successful in 80 per cent of the cases, and in the subsequent generations there was a moderate to high percentage of takes.

Unlike most other rat sarcomata this tumor on transplantation grew progressively in almost every animal in which a graft became established.

In conclusion the author describes this tumor briefly as a chondro-rhabdomyosarcoma of the sternum, a transplantable metastasizing tumor in which cross striated muscle fibers have persisted through fifteen generations although the cartilaginous elements early lost their power of differentiation.

GAMOR E. BELLER, M.D.

## BLOOD

Loehr W. and Loehr H. The Changes in the Physicochemical Structure of the Blood Plasma with Accelerated Sedimentation of the Blood Cells Following Treatment with Irritants, Surgical Operations, and Diseases (Ueber die Veränderung der physikalisch-chemischen Struktur der Blutfractionen bei beschleunigter Beschleunigung im Gefolge von Reizwirkungen, Operationen und Krankheiten). *Zeitschrift für experimentelle Medizin* 9: 1, 202, 20

In this study the authors attempted to determine the physicochemical changes produced in the blood plasma by injections of proteins, infections, surgical diseases and septic operations. For this purpose they did not use the plasma fractionation reactions of Sachs and von Oettingen but employed the viscosity, refraction and surface tension. In all of the experiments the determinations were made on plasma entirely free from hemoglobin to which hydrazine or citrate had been added. The use of the Ostwald viscometer the influence of temperature was eliminated by means of a thermostat kept constantly at 20 degrees C. Hydrazine was used only for the determination of fibrinogen and for particularly important cases. For other determinations 0.5 per cent solution of sodium citrate was added to 40 c.c. of blood.

Following protein injections, aseptic operations, and diseases an increase in fibrinogen associated with increased acceleration of sedimentation of the blood cells was first noted. Running parallel with the acceleration of sedimentation there was a considerable increase in the relative viscosity of the plasma. The surface tension in the plasma was decreased. By means of the Nagels-Rohrer technique a considerable change in the relative proportions of albumin and globulin in favor of the latter was observed constantly in the presence of accelerated sedimentation. These changes are demonstrable also in the serum, but to considerably less extent.

Of the stimulations mentioned, septic operations proved to be the most effective with regard to the constancy of their effect and the strength of the reaction produced. Such regularity was not always observed after single injections of protein. The physicochemical changes became more marked the more extensive the surgical interference.

THOMAS (2)

## BLOOD AND LYMPH VESSELS

Matas, R. Arteriovenous Fistula of the Femoral Vessels (Arteriovenous Varix) on Level 10th the Origin of the Profunda. *Surg. Clin. N. Am.* 9: 4, 85

The author reports the history of a healed shell wound in the right thigh over which a thrill was felt three months after the injury.

Palpation showed a decrease in the pulse of the dorsalis pedis and posterior tibial arteries as com-

pared with the left side. A slight pulsation which was visible  $\frac{1}{4}$  in below Poupart's ligament extended upward and downward along the femoral vessels, the superficial veins above and below the scar were decidedly enlarged when the patient stood up. On palpation, an intense purring thrill was felt, which extended upward along the iliac vessels and downward to the internal condyle. Auscultation revealed at the level of the scar a typical loud systolic murmur which diminished in intensity upward and downward along the vessels from the scar. A loud venous roar was loudest over the scar and disappeared near the umbilicus above and the femoral condyles below. When the tip of the finger was pressed over the scar the pulsations and bruits ceased, showing that this was the site of the anastomosis.

With the exception of these local disturbances, the general physical examination was negative. When the old scar which had remained over the site of the arteriovenous fistula was compressed with sufficient force to stop the thrill and the pulsations, the patient became conscious of his heart beat and the femoral pulse above the aneurism became slower. If the pressure was continued for long time he became faint and the blood pressure taken simultaneously with the pulse showed an increase. The instant the compression was discontinued the pulse rate rose to normal and the blood pressure fell to the original standard. This sign is designated as Brinkman's bradycardiac phenomenon.

The investigation of the efficiency of the collateral circulation was carried out first by compressing the femoral artery immediately above the aneurism and then by compressing both vessels with compressor applied directly over the fistula. If the limb was completely exsanguinated up to the level of the fistula by elastic compression with an Esmarch bandage and the bandage kept in place for ten minutes while the common femoral vessels were occluded by compression, it was demonstrated that the collateral circulation had developed sufficiently to maintain living circulation in the toes, foot, and leg in spite of the complete occlusion of the main vessels. This was demonstrated by watching the hyperemic area which followed the removal of an elastic bandage and constrictor applied from the toes to the level of the aneurismal communication. On removal of the bandage while the artery and vein were firmly compressed at the site of the anastomosis the hyperemic wave was seen to rush down the thigh and to the middle of the leg with characteristic redness, and then with less intensity over the lower leg and foot, lingering and spreading over these parts and gradually replacing the waxy pallor of the exsanguination.

The operation was performed as follows:

1. An elastic bandage and constrictor was applied from the toes to the upper third of the thigh.
2. A vertical incision 6 in long was made in the Poupart's ligament and down below the apex of Scarpa's triangle.

3. Poupart's ligament was exposed and the falci form process divided.

4. The common femoral artery and vein were isolated and the main artery and vein dissected to the level of the anastomosis, which was recognized as

hard, callous mass or bridge of scar firmly adherent to the vessels, binding and fusing them together in dense, composite mass. The profunda artery was actively feeding the fistula, the vein also was supplied by its profunda branch.

5. The profunda was then recognized at its origin from the common femoral, about  $\frac{3}{4}$  in from the anastomosis and on the posterior side of the artery. The vein also accompanied it. It was too deep to isolate quickly and in order to control it a flexible Doyen clamp was applied to compress the profunda midway between its origin and the fistula, thus effecting prevention of the recurrent stream of the profunda from reaching the fistula.

6. The thick callous margin of the scar tissue which connected the two vessels was excised. The adventitia was very weak at this point. A few silk sutures were passed through the adventitia (not perforating the artery) to reinforce the weak spot. When the sutures were tightened the bulge completely disappeared. The fistulous opening in the vein was sutured with a fine milliner's needle.

7. The falci form ligament was not sutured, giving additional cover to the artery and vein. The hyperemic reaction which had spread rapidly to the toes after the removal of the constrictor left behind it uniform pink normal, living color. The pedal pulses were felt just as before the operation. A few minutes after the separation of the vessels and the restoration of the circulation to its normal channel the radial pulse rose rapidly from 90 to 120, then to 160 and finally reached the maximum speed of 180. After ten minutes, it descended until it reached the level of 110 and later 100.

It is possible that the sudden displacement of large volume of blood into the limb, release of the constrictor may have contributed to the post-operative tachycardia through momentary fall in the blood pressure.

Because of the collateral circulation through the branches of the internal iliac, it is only by direct compression of the abdominal aorta, by the bifurcation or elastic circula compression around the waist when the subject is thin that a completely ischemic field can be obtained in the iliofemoral region.

A few fundamental guiding principles to be observed are:

The suppression of the communicating channel or fistula without sacrifice of the vessels involved.

1. Prophylactic hemostatic control.
2. Knowledge of the behavior of the peripheral circulation on suppression of the circulation in the main vessels at the site of the fistula whenever this is accessible to compression.

NORMAN H. KAY, M.D.

Leriche R. The Technique of Peri Arterial Sympathectomy and Some New Indications (La technique et quelques indications nouvelles de la sympathectomie periviscerale). *Presse Méd. Par.* 2, 21, 3

A number of investigators who have performed experimental periarterial sympathectomy upon animals have failed to observe the intended decrease in the size of the vessel described by Leriche. Leriche answers these criticisms by stating that, with one exception, he too has never observed this phenomenon in any of the usual laboratory animals. One dog upon which he performed the operation showed immediate shrinkage of the artery, but this could never be repeated. Leriche believes the failure is the result of periarterial sympathectomy as he studied only in man.

When the operation is performed upon normal arteries it is without danger. When the vessels are thrombotic and especially in cases of scabic gangrene great care must be exercised. In the beginning Leriche regarded it as necessary to perform the sympathectomy on all the main branches of the vessel surface, but he now leaves the rest of the operation.

Particular attention is called to the marked local constriction of the vessel, the second or peripheral vasodilatation which follows. Causes of the sympathetic plexus about the vessel show the phenomenon distinguishes the periarterial sympathectomy from simple arterial denervation. Following the operation there is definite peripheral vasodilatation with increase in the arterial pressure and an elevation of temperature. In the latter opinion this operation is applicable to numerous conditions, dermatology in particular, and diseases of the glands of internal secretion, especially those associated with decrease of secretion.

LOU L. D. vs. M.T.

Mayo, W. J. The Significance of Lymphatic Involvement in Infections. *J. Am. Med. Ass.* 9, 3, 170

In the light of various experiences in the Clinic the author studied the relation of the lymphatics to the ultimate prognosis in tuberculous cystitis and cancer all introduced from without through the protective mechanism of the body and to which, tuberculous and syphilitic by identifiable foreign material. He states that it must ever be remembered (Kubheim's original observation) that the source of infection can be detected if the sentinel lymphatic gland first showing enlargement can be located.

Bearettia has confirmed the experimental work of Noctuel on anthrax. Noctuel demonstrated that rabbits and guinea pigs tolerate large numbers of anthrax bacilli injected directly into the blood or the peritoneal cavity without contaminating the cutaneous tissues, animals which could cause fatal anthrax infection if injected into the skin tissues which are rich in lymphatics. This shows

that there is definite relation between the site of the infecting organisms and their toxic effect, and it shows an interesting field for research.

Many of the most able exponents of the treatment of tuberculous lesions that it is possible to remove the primary tuberculous focus, here the bacilli enter the protective mechanism of the body, become adapted and first involve the lymphatic system, the secondary processes. It thereby is rendered much more amenable to treatment. These investigators evidently believe that, as Roseman has found it to be the case in many types of bacteria, the strain of tubercle bacilli becomes more or less specific to the individual. Surgical experience in the removal of localized tuberculous deposits gives some stability to this opinion.

The fact in relation to spirochetal involvement of the lymphatics are less easy to ascertain but evidence shows that in a high percentage of cases the lymph nodes fail periodically to check the progress of the disease. There is much evidence suggesting that the glands may act as secondary foci in the distribution of spirochetes, while the defense reaction developed by their presence in the lymph nodes is to considerable extent protective against the action of remedial agents. We know that in the spleen, which is a lymphoid organ, spirochetes are protected against remedial agents under certain conditions that are arrest in progressive phagocytosis and remarkable improvement in the clinical course follows the removal of the spleen, and that in such cases spirochetes are to be found in the spleen.

Roseman's observations and experiments showing the specificity of organisms in relation to their secondary effects upon lymphatic filterers suggest that spirochetes have been found experimentally, each with high individual characteristics which can be shown by the living animal as well as in the test tube.

From various estimations made to determine the ultimate result following operation for carcinoma, particularly those of Sistrunk and Bloodgood, it can be said that the curability of cancer following operation for growths which can be locally removed depends more on the glandular involvement than on any other one factor. It would be conservative to state that two-thirds of all cases of removable cancers in which there is no glandular involvement will remain cured and death due to subsequent local extension or blood transmission will result in only one-third.

One may even state that other things being equal the prospects of cure of cancer depend more upon the lymphatic richness of the part affected than upon any other one factor. In from 80 to 85 per cent of cases of cancer of the body of the uterus.

Such is poor in lymphatics hysterectomy results in five year cure but in cases of cancer of the cervix which has rich lymphatic supply it gives five year cure in only 5 per cent. Because of the sparseness of the lymphatics a five year cure follows.

operation in 50 per cent of the cases of cancer of the large intestine. Incurability of carcinoma of the colon is more often due to secondaries in the liver caused by emboli broken off from cancer infected masses thrombosed from carcinoma of the glands. In carcinoma of the stomach, which has a rich supply of lymphatics, a cure is obtained by radical operation in only 25 per cent of the cases.

The lymphatics are a system of absorbents. Twenty years ago Charles H. M. emphasized the fact that the lymphatics reach the height of their activity in adolescence and like the tonsils, the spleen, and other lymphoid structures show retrogression. This fact explains the relative curability decaying by decade of carcinoma in the aged as contrasted with the rapid growth of malignant disease in the young.

The toxic agents are commonly distributed three ways: through the blood, the distribution being exceedingly rapid through the lymphatics the distribution being slower and by local extension from the pathologic lesion.

The arterial part of the capillary has greater pressure than the tissues, and the tissues have greater pressure than the venous part. The point should be emphasized that normally the blood capillaries pick up only molecular substances or extremely fine subdivisions, soluble in water below the colloid dimensions. With the exception of the gastrointestinal tract and liver (portal system) the blood capillaries are not normally pervious to colloidal substances, but these larger particles are taken up by the endothelial cells which act as phagocytes and by amoeboid movements carry them into the lymphatics. Generally it is the function of the lymphatics as absorbents to pick up material substances insoluble in water such as bacteria, protozoa, and cancer cells, which are too large to enter the blood capillaries. Thus absorption is effected through the agency of phagocytes which reach the lymphatics by diapedesis. The reactions in the lymph nodes represent the struggle of the gland to detoxicate the pathologic agents.

There are no lymphatics in the liver other than in the portal connective tissue spaces. The star-shaped cells of Kupffer are endothelial cells with phagocytic properties lining the blood channels and sinuses of the liver. There is very little evidence to show that Kupffer cells differ in function from similar phagocytic endothelial cells lining the blood sinuses in the spleen, lymph nodes and other organs.

The voluntary muscle has no lymphatics outside the connective tissue spaces of the muscle sheaths, a fact which accounts for their remarkable resistance to infection.

Herring and McIntosh conclude that the lymphatics are probably not so numerous as is often believed, and that they are almost entirely confined to the true connective tissues. They have shown that the lymphatics are concerned with the absorption of solids and material which is insoluble in

water while the blood capillaries are concerned mainly with the absorption of material which is soluble in water.

The influence of secondary septic infection on the lymphatic manifestations of tuberculosis, syphilis, and carcinoma can hardly be overestimated. The tuberculous patient seldom dies from tuberculosis unless the infections products are confined, producing injurious pressure as on the brain, death results rather from the associated sepsis. When there are septic complications of tuberculous processes which are removable the prospect of cure or improvement is greatly enhanced. In cases of tuberculosis it is very important to eradicate all foci of infection in the tonsils, teeth, etc.

In syphilis the prospect of successful lymphatic defense is not good, and greater or smaller number of spirochetes escape from the lymphatic glands into the circulation. Undoubtedly there is more or less individual immunity to syphilis, but permanent arrest of the condition depends largely on specific medication, such as arsphenamin and mercury rather than on spontaneously produced immunization. The removal of foci of infection and septic complications of syphilitic infection has been shown to be of great influence in aiding the arrest of the disease by appropriate treatment.

In cancer the prospect of successful glandular defense against the extension of the disease is exceedingly poor. There is reason to believe that in individual cases there is certain immunity to cancer.

Clinical and pathologic experience teaches that in the majority of cases carcinomatous involvement of glands means incurability of the disease. It is true that glandular defense may be efficient for prolonged period, but when the lymphatics are involved the carcinous process ultimate cure is confined to small group of cases.

Experience has taught us the advisability of removing the primary source of the disease wherever possible, whether or not all of the involved lymph nodes can be extirpated, especially if the disease is situated in a septic region such as the stomach, intestines and rectum. A palliative resection, even if all the enlarged glands cannot be removed, will often add three years or more of comfortable existence. The author has had patients for whom palliative resection of the stomach was performed without removal of all the infected glands, who lived for three or more years in comfort and apparent health. This occurred also in cases in which the liver contained metastatic carcinomatous nodules. Palliative operations which remove the primary source of the disease may permit the body's defense to exert its full strength on the glandular and other secondary lesions.

Not all enlarged glands associated with cancer develop in septic situations such as the gastrointestinal tract, are due to carcinoma. The glands may enlarge as benign lesions, such as a chronic ulcer precedes the carcinomatous change. Chronic



steps involving the glands is not infrequently the glands may become so extremely hard as to appear malignant. This condition is quite constant in carcinomas of the large intestine.

### SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Churchman, J. W. The Reverse Selective Bacteriostatic Action of Acid Fuchsin. *J. F. for Med.* 9:1 2000.

The selective bacteriostatic activity of gentian violet is now a well established fact. If bacteria are exposed to this dye and planted on plain agar all the more common Gram-positive spore-bearing aerobes are killed even by relatively short exposure. What is true of gentian violet is true also in greater or less degree of their basic dyes of the triphenylmethane group.

The term reverse selective activity is used in this article to indicate bacteriostatic property whose selective feature is the reverse of that of gentian violet.

The author discusses the activity of acid fuchsin and allied sulfonated substances under three headings, viz. penetration, chemical affinity and method of ionization.

1. Penetration. The simplest explanation for the behavior of gentian violet and acid fuchsin toward bacteria is that the whole process is simply selective penetration. Gentian violet certainly penetrates Gram positive bacteria, which it kills, more readily than Gram negative bacteria, which it does not kill. That is to say it penetrates the living organisms, tests of its staining power on fixed smears are of no value in this connection. The author found that gentian violet kills spores although it penetrates them little if at all, and by longer exposure may be made to penetrate Gram negative bacteria which grow even when deeply stained. While under ordinary conditions of experiment, gentian violet is non-toxic for Gram negative organisms, it may be made toxic for them by slightly increasing the temperature. Acid fuchsin also penetrates Gram positive spore-bearers almost as readily as it penetrates those which are Gram negative but it kills the latter and spares the former.

Chemical affinity. That the reverse selective activity of acid fuchsin is in some way connected with the  $SO_2$  radical in its molecule is strongly suggested by the results of experiments. The action might depend not so much on the presence of the sulphonate group as on the method of its bonding, although it is exhibited by substances such as chromotropic acid in which the  $SO_3$  group is firmly attached, as well as by substances such as sulphonate acid, in which the bonding is very weak.

3. Ionization. The method of ionization of the two groups of dyes whose action has been studied may explain their behavior. The fact that one group is basic and the other is acid is suggestive. If this explanation is correct, Gram positive spore-bearers

and Gram-negative differ in their hydrogen ion concentration.

The author summarizes the results of his experiments as follows:

1. Acid fuchsin possesses a bacteriostatic power which is selective between Gram-negative and Gram-positive spore-bearing aerobic organisms. The selective feature is the reverse of that of gentian violet.

2. This reverse selective activity is possessed also by simpler sulphonated substances and appears to be dependent in some way on the presence of  $SO_2$  radicals.

3. Selective penetration, if at all concerned in the behavior of gentian violet and acid fuchsin toward bacteria, must play a very minor rôle.

4. In the case of gentian violet the power to kill organisms and the power to prevent their growth run parallel so far as the selective feature is concerned. In the case of acid fuchsin, the bacteriostatic and bactericidal selective features do not run parallel.

5. *Bacillus pyocyaneus*, an organism resistant to gentian violet, is susceptible to acid fuchsin. This organism is the cause of annoying and persistent wound infections. The observations on the effect of the sulfonated substances may suggest a method of controlling these infections.

GARRETT E. RENTON, M.D.

Bentley, F. G. Campbell, W. R., and Fletcher, A. A. Further Clinical Experience with Insulin (Pancreatic Extracts) in the Treatment of Diabetes Mellitus. *Br. M. J.* 9:1 48.

The authors have treated over fifty cases of diabetes mellitus with insulin. The most striking results were seen in children and young adults, but all of the patients were benefited. It is important to adjust the dosage of insulin so that the amount is sufficient to nullify the postprandial hyperglycemia and yet insufficient to cause a dangerous lowering of the blood sugar.

At the end of the preliminary period of observation on a fixed diet the amount of urine excreted by the majority of the patients with severe diabetes was fairly constant. This determination is most valuable as an indication of the amount of insulin to be employed. In certain cases however the daily excretion of sugar varied and it was impossible to determine the proper initial dose of insulin. Under such circumstances it is advisable to begin with a moderate dose and increase it gradually until the desired effect is obtained.

After the patients are freed from glycosuria and ketonuria they are permitted to use an adequate basal ration. As a rule they then felt so well that they demanded increased food because of desire to eat. Other factors which must be decided are the patient's most suitable height and condition of nutrition and the means which should be employed to attain them, also to what extent work should be allowed. In the cases of most patients it seemed an

was to allow an increase in weight, reduction of the night was effected by decreasing the food intake. In the cases of emaciated patients some increase in weight was believed desirable on account of the associated improvement in the general condition, resistance to infection etc. even though an increased amount of insulin was required. The results of the experiments are summarized as follows:

Under treatment with insulin in cases not otherwise amenable to treatment glycosuria is abolished ketones disappear from the urine and the blood, the blood sugar is markedly reduced and maintained at normal levels, the alkali reserve and alveolar carbon dioxide in cases of acidosis and coma return to normal, the respiratory quotient shows evidence of increased utilization of carbohydrates and the cardinal symptoms of diabetes mellitus are relieved, well marked clinical improvement being noted.

1. Insulin is specific in the treatment of diabetic coma.

2. Hypoglycemic reactions following the administration of insulin are relieved by the administration of carbohydrates and by the injection of epinephrin.

GEORGE E. BULLARD, M.D.

Tierroff, W. J. Treatment by Diathermy. *Bris Med J* 1934, 43.

The first effect of diathermy is an increase in the temperature of the part treated, the later effects are relaxation of the tissues and dilation of the blood vessels with a consequent increase in the blood supply to the part treated. The therapeutic effects of diathermy are therefore explained by the lowering of the blood pressure, the relaxation of spasm with the relief of pain, and the improved nutrition of parts whose blood supply has been deficient.

It is in the relief of spasm and pressure, and therefore of pain, that diathermy finds one of its important indications in clinical practice. Neuritis, deep seated pain such as that associated with dysmenorrhea, the spasm of a ureter excited by the passage of calculus, the hypertonicity of the lumbar muscles in lumbago, or of the neck muscles in torticollis, the muscular rigidity of local tetanus, the pain of a recently sprained ankle, are usually markedly relieved and often cured by this treatment. Atrophic conditions improve very much because of the nutritional effects of the increased blood supply.

In surgical diathermy the heat is concentrated on one spot, while in the medical applications it is distributed over a large area. Surgical diathermy differs from the destruction of tissue by heated wires or the Paquelin cautery in that, when properly applied, it effects destruction by heat coagulation rather than by charring or incineration.

Intra-canal growths, hemorrhoids, benign or malignant superficial growths, the papillae molles, enlarged tonsils, naevi, etc. are suitable for this treatment. Diathermy is also a delicate and efficient method for depilation.

WILLIAM KAY, M.D.

## EXPERIMENTAL SURGERY AND SURGICAL ANATOMY

Gassner, R. Homoplastic Transplantation of Explants from Adult Frog Skin. (*Homoplastische Transplantation von Explantaten aus erwachsener Frochhaut*). *Deutsche med. Wochenschr.* 9, 2, xlviii, 63.

The author placed frog skin in the plasma of the frog, rat, chicken, and guinea pig, and in human blood plasma, and after varying intervals grafted this tissue upon the animal in whose serum it was placed.

The transplantation to the frog was successful; the remaining so-called homoplastic transplants after three to five days of apparent healing, were disintegrated. The author draws the conclusion nevertheless that the superficial tissue in a heterogeneous medium develops heterogeneous characteristics, and considers it all worth while to determine whether heteroplastic tissue in a homogeneous medium will act as homoplastic tissue.

MEXER (2)

Torracca, L. The Accumulation in the Peritoneal Cavity of Gases Injected into the Veins. (*Sull'accumulo nella cavità peritoneale dei gas iniettati nelle vene*). *Riforma med.* 9, xxxviii, 205.

In a previous article the author reported experiments demonstrating that oxygen injected into the jugular vein may accumulate in the peritoneal cavity. In this article he states that the same phenomenon occurs when nitrogen and carbon dioxide are injected. The experiments were made on guinea pigs. The only important difference observed was that the animals died much more quickly following the injecting of the two gases than after the injection of oxygen.

Previous observers believed that the injected gas traverses the pulmonary circle, spreads to the left heart and reaches the subperitoneal ascular territory through the arterial network. Torracca believes the mechanism may be different because in many cases a very large quantity of gas is found in the inferior vena cava and its branches (especially the renal veins) as compared with that found in the left heart and the arteries, and because the quantity of gas which can be made to collect in the peritoneum by increasing the pressure and duration of the injection compares well with that contained in the left heart and the arteries.

The assumption seems permissible that the gas reaches the right auricle from the superior vena cava whence it spreads into the underlying ventricle and then passes into the inferior vena cava and by the retrograde route into the venous system of the lower part of the body. In this way it reaches the subperitoneal regions directly by the venous system and enters the peritoneal cavity by passing through the venous walls. This view is supported by the fact that the phenomenon can be produced in the cadaver.

R. A. BARNARD

Olivier, E. The Topography of the Nerves of the Brachial Plexus and Axillary Vessels at their Entrance into the Subclavicular Space. (Noter la topographie des nerfs du plexus brachial et des vaisseaux axillaires à leur entrée dans le creux sous-claviculaire). *Presse Méd.* Par. 93, 1904, 108.

The divergence of opinion relative to the anatomical relation of the cords of the brachial plexus to the axillary vessels led the author to investigate this question. Opposite the first rib the axillary artery is situated lateral to the vein and is separated from the subclavicular muscle and the vein by the nerve to the pectoralis major muscle. At this point it is very difficult to ligate the artery, as it is partially overlapped by the vein medially, and is closely associated laterally with the medial and posterior cords of the brachial plexus. Here the cords of the plexus lie lateral to the artery and are intimately bound together.

Distal they gradually course from a thoracic medial and from a superficial to deeper plane. The lateral cord is most superficial, closely adherent to the under surface of the subclavicular muscle and in the same plane as the large subclavicular lymphatic gland. Lateral to this cord lies the subscapular nerve. Behind it and in deeper plane is the nerve to the serratus anterior muscle. Immediately below it and medial to the lateral cord lies the medial cord of the plexus. This structure is crossed anteriorly by the vein to the pectoralis major, which has divided into two branches. The posterior cord lies upon a deeper plane and in the angle formed by the axillary artery and the first rib. Gradually it comes to lie between the artery and the upper surface of this rib.

In ligating the artery beneath the clavicle it is therefore necessary to exercise great care in separating the overlying structures and in passing the ligature so as not to injure the posterior cord of the plexus.

LOYAL F. DAVIS, M.D.

Felix, W. Anatomical, Experimental, and Clinical Investigations Concerning the Phrenic Nerve and the Innervation of the Diaphragm. (Anatomische, experimentelle und klinische Untersuchungen über den Phrenicus und über die Zwerchfellinnervation). *Deutsche Zeitschrift f. Chirurg.* 9, 1904, 313.

In the present research the author has brought forward the following questions: (1) To what vessels does the phrenic nerve furnish the sensory nerve supply and what is the nature of this sensation? (2) What is the significance of the connection between the phrenic and sympathetic? (3) How is the musculature of the diaphragm innervated and what is the sensory nerve supply of its serous coverings? (4) Can the typical section of the phrenic nerve be so modified that it includes the accessory nerves which occur as frequent variations?

The anatomical investigations undertaken to answer the questions contained in following the course and distribution of the phrenic nerve in

series of human embryos and in attempting to determine its communications with other nerves. In addition the author gives a review from the literature of the variations occurring in the course of the phrenic, and of their topography from a surgical standpoint.

The results of these investigations are summarized in the following statements:

1. The phrenic nerve furnishes the sensory nerve supply to the diaphragmatic pleura and to the peritoneum covering the diaphragm. It does not give any branches to the pericardium. The diaphragmatic pleura and the peritoneum covering the diaphragm contain sensory fibers from the phrenic nerve only in their central portions and particularly in the lumbar portions.

In the neck the phrenic nerve receives one or more small branches from plexus (plexus superficialis) which is primarily sympathetic and gas afferent and which lies upon the dome of the plexus. Since branches from the last cervical and first thoracic nerves take part in the formation of the superficial plexus, the branches of the plexus which pass into the phrenic nerve may contain small fibers in addition to their principal sympathetic component.

2. In the subperitoneal connective tissue of the diaphragm particularly in the lumbar area the phrenic nerve anastomoses with the sympathetic nerve. At that point there is an essentially sympathetic ganglionated plexus called the "plexus phrenicus." Branches of the costal plexus, the phrenic ganglion, and numerous sympathetic ganglia participate in its formation.

3. Since all the branches of the phrenic nerve which have sensory endings in the serous coverings of the diaphragm communicate with the sympathetic it is possible that the sensory branches of the phrenic nerve are formed of sympathetic fibers. Since few of the motor branches of the phrenic communicate with the sympathetic, it is possible that the sympathetic also carries fibers for the musculature of the diaphragm.

4. Its entire course the phrenic nerve contains non-medullated sympathetic fibers. They lie united in bundles in the periphery of its transverse section.

5. The lowest intercostal nerves (eighth to twelfth) take part in the sensory innervation of both the serous coverings of the diaphragm. They innervate the rib cage strip upon that portion of the diaphragm which takes origin from the ribs.

6. The twelfth intercostal nerve supplies motor fibers to the serratus of the diaphragm coming from the twelfth rib. This may also be established embryologically since the isolated absence of the serratus in case of congenital hernia of the diaphragm points to special innervation.

The author gives the following summary of the variations and topography of the phrenic nerve.

Among the variations of the phrenic nerve there are two of especial importance for the surgeon. First certain portions of the phrenic trunk may

take an abnormal course (accessory phrenic) and therefore are not divided in section of the phrenic nerve. Secondly these accessory nerves may take the form of a single nerve at the lateral border of the scalenus anticus. This is a rare variation. A number of anatomical facts suggest that the peritoneal exposure of the phrenic nerve above the omohyoid muscle is more practical than that below.

The clinical part of the work attempts to answer the following questions: (1) What is the basis of the generally accepted conception as to the sensory function of the phrenic nerve? (2) What is the significance of the connection between the sympathetic and phrenic nerves? (3) In using local anesthesia in intrathoracic operations must the phrenic nerve be blocked in order to anesthetize the parietal pleura, the pericardium and the peritoneum covering the diaphragm? (4) Can section of the phrenic nerve be so modified that all of its motor fibers are blocked?

If as those of the accessory phrenic nerves for the bulk of the diaphragm concerned will be divided.

On the basis of his own experimental investigations with stimulation of the central stump after section of the phrenic nerve, and from his own clinical observations the author concludes that the phrenic nerve is able to transmit central and, and that this is the explanation of the long recognized shoulder pains in affections involving the course and distribution of the phrenic nerve. Pain in the summit of the diaphragm and in the upper abdomen on the other hand, must be ascribed not to the phrenic nerve but to the intercostal nerves. Moreover the fact comes to the conclusion that the sensory function of the phrenic depends upon the sympathetic fibers it contains. A stimulation of the sympathetic nervous endings of the phrenic nerve in the diaphragm is followed by the peripheral projection of sensation in the region of the supraclavicular nerves of the central nervous system. Upon stimulation of these sympathetic fibers of the phrenic nerve, depend also the frequently occurring abnormal contractions of the diaphragm as, for example in angustia. The answer to Question 3 follows from the results of the anatomical investigations.

Finally upon the basis of twenty-eight cases—among them ten cases with an accessory phrenic nerve—in which sections of the phrenic with subsequent exeresis (extirpation of the peripheral stump from the thorax) was carried out, this method is recommended as the safest to secure paralysis of half of the diaphragm. MYERS (7)

## ROENTGENOLOGY AND RADIUM THERAPY

Schultz, H. A Summary of the Determination of X Ray Intensities. *J. Radiol.* 1913, 14.

In previous communication the author reported ed investigations made by himself with regard to roentgen ray intensities. These investigations are carried out to determine method of treatment for deep carcinoma which could assure the

application of roentgen rays of a sufficient intensity to cause degeneration or death of the cancer growth. The constant factors were a maximum kilovoltage of 50 determined with sphere gap in series with the tube terminals, milliamperage 15 and broad focus Coolidge tube 8 cm in diameter. The

variable factors were the distances from the focus or target of the tube to the surface of the skin, the ports of the tube and the filter. A summary of the results obtained is given in tables and the conclusions reached at that time are again presented.

With the collaboration of B. Chem the investigations have been extended to crest kilovoltages of 50, 75, 100 and 150. The results are shown in table. The clinical application of these results and economic considerations, viz. the saving of the tubes by the avoidance of large loads, led to the adoption of the following factors: maximum kilovoltage 100 milliamperage 5 focal skin distance, 50 cm. field, 30 to 30 cm square filter mm copper plus mm aluminum. The number of fields is to be an anterior and posterior. It is necessary only to determine the anteroposterior diameter. The advantages gained by the newer method are:

1. Shortening of the time duration of the application of the roentgen ray. If 5 ma are used the total field application consumes from three to four hours. The method using maximum kilovoltage of 50 consumes from twelve to fourteen hours.

Radiation sickness is not nearly as severe when the maximum kilovoltage is 100 as when it is 50. Apparently the destruction of the blood corpuscles and normal tissues is less severe than with the old method.

3. The tumor is more rapidly resorbed, evidently because of the greater biological action of the short

roentgen ray. It must be assumed, though it cannot yet be proved that the shorter the wave length of the radiation the more intense the biological action on the tumor cells. The gamma rays of radium have the shortest wavelength (any radiation known). Gamma rays of radioactive substances cause much more rapid regression of cancer tumor than any roentgen ray produced so far.

4. The same intensities of radiation may be closely reproduced if the same factors that is, kilovoltage, focus skin distance, filter size, field and tube are employed. It is desirable however to determine the duration of the application carefully for each transformer and for each tube.

ARTHUR HARRING, M.D.

Gleason O. Newer Investigations of the Problem of Roentgen-Ray Dosage. *Am. J. Roentgenol.* 1913, 9, 3.

In the investigations reported a sharp distinction was maintained between the problems of biologic dosage and those of relative (practical) dosage. The author states that the solution of the problem of absolute or scientific dosage on the basis of the mechanism of ray effect should lead to the construction of an ideal dose-measuring apparatus.

Mention is made of previous work done along the same line. A detailed description of ionization chambers used in the investigations is given. The results are presented by curves. Most of the subject matter of the article is highly technical and considered from the viewpoint of the physicist rather than that of the physician.

ANDREW HARTUNG, M.D.

Fallis, G. Ionization Measurements. *Am J Roentgenol* 93: 48

During the last few years ionization measurements have assumed considerable importance in radiation therapy. In order that information relating thereto may be readily available, the author has summarized briefly the essential facts of such measurements. He defines ionization and ionization currents, states length and describes in detail measuring instruments used to determine their amount as produced by radiations from radium and roentgen rays.

It is very probable that the biological effects of radiation are closely related to the ionization produced in the tissues irradiated. As the ionization cannot be measured directly the attempt is made to correlate biological effects and ionization in the air of an ionization chamber.

In conclusion, the author states that ionization measurements of radiation for therapeutic purposes are reliable provided the quality of the radiation and the distribution of the ionization in the chamber are not very different for the different measurements. The instrument must be properly designed and constructed as regards the type of ionization chamber, insulation, electrical shielding, screening from extraneous radiation, and saturation, and should be calibrated every day or oftener if a change is suspected, by means of radium standard.

ANDREW HARTUNG, M.D.

Smithies, F.: The Necessity for Caution in the Employment of High-Voltage Roentgen Rays as a Therapeutic Agent Against Malignant Diseases. Acute Adrenal Insufficiency and Death as Sequelae. *Surg Gynec & Obst* 93: xxxvi, 6

Medical literature contains very few if any warnings against the new high-voltage roentgen therapy. Articles are concerned chiefly with the gross effects of the treatment upon the neoplasm, giving scant attention to pathologic changes in tissues part from those in which tumors are situated or to the clinical phenomena observable in cancer hosts.

The case reported by Smithies was that of a man 58 years of age who fell on his back from horse. As soreness of the back persisted, roentgenograms were made. The diagnosis as early osteosarcoma. Roentgen therapy with a voltage of about 30,000 was advised and accepted. Three sittings lasting several hours at least were given. So far as could be ascertained one treatment was

given through and through from the back, directly over the supposedly sarcomatous area, and two cross fire treatments were given from the back at an angle of about 60 degrees to the spine. The patient was then sent home.

There were no immediate ill effects, but within months symptoms which became progressively worse led to a diagnosis of Addison's disease. Death occurred within four months.

In his résumé the author states that instances of acute or "fulminant" Addison's syndrome are rare and that it is most unusual for the disease to develop after the age of 50 or for death to occur within a year. It appears to Smithies improbable that in the case reported the patient's fall caused acute bilateral adrenal injury and failure. The man was in good health when he sustained his accident; it seemed to be nothing more than bruising of the paraspinal muscles and he remained well, despite his slight muscular lameness, until a few weeks after the roentgen exposures. Thereafter his colic lapae was rapid.

The proximity of the adrenals to the areas treated by the high-voltage roentgen ray for long time-intervals strongly suggests that the treatment is responsible for the acute collapse of adrenal function and doubtless for the destruction of chromaffin tissue.

Unfortunately autopsy was not permitted.

ANDREW HARTUNG, M.D.

Gaylord, H. R. and Stenstrom, K. W. Comparative Measurements Between Radium and X Rays Concerning Energy Absorbed at Depth. *Am J Roentgenol* 93: 56

Having at their disposal an adequate amount of radium and roentgen-ray apparatus capable of continuous operation at 500,000 volts, the authors attempted to determine the relative penetrating quality of these two agencies by measurements at similar distances and similar distribution. The measurements are made with ionization chambers built according to the description given by Fricke. Some of the experiments made are described in detail and the results tabulated.

The authors conclude that for external radiation such huge amounts of radium could be required to compete with existing roentgen equipment that the cost would be prohibitive. Moreover the difficulty of obtaining adequate protection from such large amounts would constitute an insurmountable obstacle.

In some instances moderate amounts of radium in properly arranged packs will be found to meet special conditions better than the roentgen ray; but these cases are few. With the improvements which may be expected in the near future, the field of usefulness of the radium pack of moderate size will be increased. The advantages of the roentgen rays apply only to external radiation. Cases in which the growth can be reached and radium or emanation of radium can be planted into the sub-

stance of the tumor the roentgen ray cannot displace radium, but they may be usefully combined with the implantation. ADOLPH HARTUNG, M.D.

Deland, E. M. Radium Treatment of Keloids. *Surg. G. & Obst.* 923 XLVII, 63

Many methods of treatment have been tried in the attempt to find a cure for keloidal growths, but until the appearance of light therapy none was uniformly satisfactory. The Finson ray proved fairly effective and the roentgen ray more so, but in the opinion of the author radium is the best therapeutic agent thus far discovered.

Fifty-eight cases are discussed in this article. Forty-eight were treated with radium alone. Many different methods of treatment were tried to ascertain which could yield the best results. It was noted that there was a fairly definite relationship between the age of the lesion and the amount of radiation necessary to eradicate it. Keloids in children responded more quickly to treatment than those in adults. The majority of the adults were treated with steel jacketed tubes laid directly on the lesion or raised on to 5 mm. of gauze. The average dose per tube was 5 mc-hrs and the average number of treatments, six. In two cases required exactly the same dosage. In some, 1 mc-hrs caused very little reaction, while in others 30 mc-hrs caused only slight redness. Occasionally 0.5 mm. of silver was used when the unfiltered tube caused excessive reaction.

Ten of the forty-eight cases are still under treatment. In twenty-six of the others the lesion has been completely destroyed. Three patients ceased treatment before sufficient number of applications had been made. In two cases the results were unsatisfactory as the keloids, which were of long duration, were treated with too heavy filtration. There have been no recurrences, either in the cases treated by absorption doses or in those treated by actual destruction of the lesion. In two cases new keloids developed near the old ones. Every case treated as benefited. The first evidence of relief was the development of certain degree of anesthesia in the lesion. Later the itching and pulling sensation ceased. Finally there was softening of the scar. In the cases treated with absorption doses there was less variation from the normal color of the skin. In a few of the cases treated with ulcerating doses there was telangiectasis, but this was by no means always sequela.

The author draws the following conclusions:

1. It seems probable that every keloid can be destroyed by radium if sufficient dose is used.

Silver filtration (1 mm.) should be used for keloids of recent origin in the cases of children, in the cases of persons with dark complexion, and in exposed areas such as the face. The dosage should be from 30 to 60 mc-hrs according to the age of the patient.

2. On all other keloids practically unfiltered tubes should be used. The dosage should be from 5 to

30 mc-hrs per tube. It should be explained to the patient that ulceration will result from this treatment.

4. There is no evidence to show that the destructive doses damage the tissues so that the lesions will recur. There is no lessening of the tendency of the individual to develop keloids.

ADOLPH HARTUNG, M.D.

Lerin, L., and Levine M. The Action of Buried Tubes of Radium Emanation on Neoplasms in Plants. *J. Cancer Research*, 9, 11, 63.

Normal tissues used in the experiments consisted of young and adult roots of the purple top turnip and the growing tips of the tobacco plant. The pathologic material consisted chiefly of club roots artificially produced on cabbage and kohlrabi, and crown galla on the geranium. Capillary tubes 3 mm. long and 0.25 mm. in diameter containing radium emanation were introduced into the plant through a small opening made by means of a sterile needle.

The tube of radium emanation was left buried in the tissue for from one to fifteen days, the plants being examined carefully during that time at regular intervals. For controls, empty tubes of the same size as those containing the emanation were inserted into identical tissues.

In the normal root tissue the only perceptible result from the insertion of radium emanation tube was complete destruction of tissue in the immediate vicinity of the tube. In the tissue beyond this area there was no change corresponding to that noted in normal tissue. Adult tissue was not affected by moderate amounts of gamma radiation.

D. VAN R. BOER, M.D.

## LEGAL MEDICINE

Ottensberg, R. The Medical-Legal Application of Human Blood Grouping: Sources of Error in Blood Group Tests and Criteria of Reliability in Investigations on Heredity of Blood Groups. *J. Am. Med. Assn.* 9, 1221, 37.

The author considers Vincent an open-slide method the best test for blood compatibility. To one drop of serum on a slide is added one drop of cell emulsion. The slide is tilted and rotated gently every few minutes to distribute the cells evenly. Agglutination is easily seen with the naked eye in from one to ten minutes at room temperature. Observation should not be longer than fifteen minutes. The microscope should not be used. Genuine agglutination is always visible to the unaided eye. If the slides are not moved after the first fifteen minutes, the film may be dried, painted with a layer of collodion and kept for a permanent record.

In the test tube method too much serum is required and weak agglutination may be overlooked. The modified Wright capillary pipette method calls for too much glassware and experience. The hanging-drop method with hollow ground slides

settling of the red corpuscles suggests massive agglutination.

Sources of error in the test are: deteriorated or weak sera; hemolysis; incubation at 37 degrees C; drying; settling of the cells; microscope observation; dense cell emulsions; undeveloped group characters in children and into agglutination.

As precautionary measures the author recommends duplicate tests with different sets of test sera shown to be active at the time of the tests; tests of both the serum and the cells whenever there is doubt; and examinations of the cell emulsion without the addition of test serum.

In studies of human heredity the accidental inclusion of cases of illegitimacy can best be avoided if the mother of each family understands the object of the examinations and consents to them.

The instances in which it is possible to predict the remaining parent when the children and one parent are known are shown in the following table. Children of Group 1 are disregarded because, as they show only recessive qualities, they can come from any combination of parents. The occurrence

of additional children of Group 1 does not alter the prediction as to the remaining parent.

#### PREDICTION OF REMAINING PARENT GROUP

Known children Group	Known parent Group	Other parent must be in Group
		or
		or
		or
		or
2 and 3		or
2 and 4	1	or
2 and 5		or
2 and 6		or
2 and 7		or
2 and 8		or
2 and 9		or
2 and 10		or
2 and 11		or
2 and 12		or
2 and 13		or
2 and 14		or
2 and 15		or
2 and 16		or
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2 and 88		or
2 and 89		or
2 and 90		or
2 and 91		or
2 and 92		or
2 and 93		or
2 and 94		or
2 and 95		or
2 and 96		or
2 and 97		or
2 and 98		or
2 and 99		or
2 and 100		or

\*The combinations of children (Groups 1 and 2) has not yet been described in the literature. Occasional parents exist that in accordance would depend on active ones in the chromosomes.

WALTER C. BURKET, M.D.

# GYNECOLOGY

## UTERUS

Grad. II. The Pathology of Uterine Bleeding in 100 Analyzed Cases. *Am J Obst & Gynec* 9:3

37

From the study of the pathologic findings in 100 cases of uterine bleeding here reported it was found that the cases may be divided into six classes according to the causes of the loss of blood from the uterus. These causes include pregnancy infection neoplasms of the uterus and ovaries, displacement lacerations, congestion endocrine distress constitutional causes, and blood dyscrasias.

In 70 per cent of the cases the pathologic changes in the endometrium played the most important role in uterine bleeding. In thirty-four cases the chief cause of the endometrial pathology was infection in twenty-five cases neoplasm and in seven cases, hyperfunction of the ovaries.

Uterine bleeding is caused also by vascular engorgement of the uterus and direct or focal infection of the genitalive organs.

Pregnancy including ectopic gestation is an important etiological factor of uterine bleeding. It was present in thirteen cases.

Constitutional causes are of minor importance. After incomplete abortion the endometrium undergoes the physiologic change incident to menstruation but the uterine cavity may harbor retained secundines which cause continued uterine bleeding.

In cases of uterine bleeding with history of infection, the bleeding is due to diseased endometrium, the disease remaining perfectly normal.

Curetage of the uterus is very important procedure in cases of uterine bleeding as the bleeding may depend entirely on the condition of the endometrium even though other pathologic entities may be present, such as distal disease fibroids etc.

Two or more causes may operate in the same case at the same time.

Adenoma polypus of the endometrium is responsible for uterine bleeding in large number of cases (at least 20 per cent) and is a distinct entity. Uterine glands penetrating the musculature may also be cause.

There are certain number of cases of uterine bleeding in which the cause is obscure no pathologic changes being found to account for the hemorrhage (eleven in the series reviewed). These have been called cases of ovarian hyperfunction.

In certain number of cases the uterine bleeding depends on displacements and lacerations caused by vascular engorgement and focal infection.

Submucous fibroids cause uterine bleeding by bringing about changes in the endometrium overlying the neoplasm.

In very small number of cases uterine bleeding may be caused by degeneration of neoplasm the necrosis causing cell destruction and the escape of blood directly into the uterine cavity.

F. L. COE, M.D.

Noon, C. C. The Microscope as Compared with the Clinical Diagnosis of Malignant Uterine Neoplasms. *Am J Obst & Gynec* 9:3

Cancer of the cervix can generally be diagnosed correctly by clinical methods. Of series of 53 cases, 84 per cent were diagnosed positively by the clinician and 4 per cent were suspected. In only 3 per cent was malignancy unsuspected by the clinicians.

In carcinoma of the cervix the lesion is not only fairly characteristic clinically but also easily accessible to inspection and touch and can be examined thoroughly during the course of an ordinary gynecological examination. Furthermore in doubtful cases biopsy is a simple procedure.

Of the 53 cases studied only 6 per cent were in the early stages. Carcinoma of the cervix gives relatively small proportion of five year cures regardless of the method of treatment. The urgent necessity for early diagnosis is therefore apparent.

In carcinoma of the fundus conditions are different. The lesion can neither be inspected nor palpated and for final diagnosis even the experienced gynecologist is forced to depend more or less upon microscopic examination.

There are many intra-uterine lesions which may be confused with carcinoma. One of the most common is carcinoma combined with myoma. An analysis of the cases studied also that at least 75 per cent of the erroneous diagnoses were due to this condition. Of the cases of carcinoma of the fundus no fewer than twenty were diagnosed clinically as benign. Fifty-seven were diagnosed clinically as malignant and in additional twenty-four malignancy was suspected. This is sufficient evidence to prove the importance of routine histologic examination.

Of the entire series of cases of carcinoma of the fundus curettings alone were submitted to the laboratory in fifty-eight cases. The clinical diagnosis was positive in twenty-one (36 per cent), the clinical diagnosis was doubtful or malignancy was suspected in twenty-two cases and the condition was regarded as benign in fifteen (58 per cent).

The frequency of sarcoma has been greatly overestimated in the past, some pathologists asserting that 10 per cent of all myomata possess malignant characteristics. The author reviews thirty-five cases of sarcoma. During the same period of time



that these cases were treated. 36 fibromyomata of the uterus were removed. Of the thirty-five malignant connective-tissue tumors, only eight appeared to be degenerations of previously benign neoplasms. Therefore in this series sarcomatous degenerations of myomata occurred in only about 0.6 of 1 per cent of the cases. None of the patients with myoma has had recurrence, but over 80 per cent of those with sarcom are dead.

Chorio-epitheliomata vary markedly as regards malignancy. A diagnosis from the curettings alone is often impossible. The author has encountered only six cases. Three of these were manifestly malignant and were readily diagnosed from the curettings.

In the entire series of 39 cases of malignant tumors the clinical diagnosis was positive and correct in 27 (69.3 per cent) the true condition was suspected in an additional fifty-nine cases (15 per cent) the clinical diagnosis was malignancy but the type of neoplasm was not recognized in fifteen (3.8 per cent) and the condition was regarded clinically as benign and its true character determined only on histologic examination in forty-five (11.5 per cent).

In conclusion the author states that the laboratory should have the benefit of clinical evidence in all cases, and the follow up of the clinic should serve as a check on the laboratory diagnosis.

E. L. CORVELL, M.D.

### EXTERNAL GENITALIA

Girard F. R. Posterior Vaginal Drainage, with a Description of a New Instrument Used as Vaginal Pelvic Guide. *California State J. M.* 1913, XII, 9.

The author has devised an instrument which he believes is new. He describes it as a clamp approximately 25 cm long with a double curve. When closed the end forms an oval ball 3.5 cm wide and 5 cm high. The anterior surface of the ball is grooved transversely. The operator feels this groove through the stretched tissues of the posterior fornix and makes his incision directly down on the ball of the instrument, thus avoiding injury to the rectum, which is held back by the lower half of the ball while the back of the cervix is pushed forward by the upper half. If a large opening is desired, a crucial incision can be made at will with the ball as guide.

When there is a possibility that vaginal drainage will be desired, the vagina should be cleansed before the operation is begun by scrubbing it with green soap and water, washing it with solution of lysol, and painting with a 1 per cent solution of iodine.

The tip of the instrument is dipped into sterile lubricant or soap solution, and inserted between the labia just below the urethra. The handle of the instrument is held pen-fashion and the instrument pressed downward and forward so that the rounded extremity slides along the posterior wall of the vagina. As the instrument is introduced the han-

dles are depressed until they are opposite the vaginal orifice, when the rounded extremity of the instrument will be found stretching the posterior fornix. The instrument can be inserted by force, and there is no possibility that it will be inserted into the urethra or rectum.

After the operator has made his incision, the clamp is opened by the assistant and drainage material is placed between the jaws of the guide and withdrawn into the vagina.

The author uses a paraffin gauze drain which can be laid in strips between plain gauze and the wound or used as a casing for a cigarette drain. These drains are removed gradually by shortening them an inch or so on the fourth day, removing half on the fifth day and removing all the remainder by the sixth or seventh day.

It is sometimes necessary to dilate the opening in the posterior fornix if it shows a tendency to close up rapidly and dam back the secretions in the pelvis. Following the removal of the pelvic drains, the sinus should not be irrigated. If the discharge is abundant, the author advises gentle mopping out with gauze.

C. H. DAVIS, M.D.

### MISCELLANEOUS

Frank, R. T. The Treatment of Cystocele, Rectocele, and Uterine Prolapse. *Am. J. Obst. & Gynec.* 1913, 3.

Childbirth causes injuries to the muscular, fascial, and connective tissue structures of the pelvis. The triangular ligament may be torn, one or both of the puborectal loops of muscles may be avulsed from the pubic bones, the genital hiatus may be greatly dilated, or the pubovesvical fascia may be split. It is not always possible to define or recognize the lesions most injured. In general, however, three main types of injury result and can be recognized and corrected.

The signs of these injuries appear either separately or combined in the form of cystocele, rectocele, and prolapse of the uterus.

Not every case of cystocele and prolapse requires operative intervention. Many women should be bled over the period of child bearing by palliative measures.

If the perineum is intact, cystocele alone may be retained by Skene or a Gehring pessary.

Prolapse of the uterus in young women who desire to have more children may be kept back with simple pessaries such as the saucer pessary of Schatz, the hard rubber ring, and the globe and egg shaped pessaries. It is unwise to operate upon old debilitated women who are poor operative risks. In such cases also pessaries should be used.

If operation is to be performed upon women who desire to have more children, the vaginal tube and outlet must not be unduly narrowed. Care must be exercised in repairing the cervix. Trachelorrhaphy according to Emmet method is preferable to amputation or tracheloplasty (by coning) because amputa-

tion frequently induces sterility or if pregnancy supervenes causes severe distocia. If the uterus body is displaced, either retroflected or retroposed, the correct operations should aim to shorten the round ligaments and should not fasten the uterus to the abdominal wall.

In the cases of women who are to be sterilized at operation or who have passed the menopause three methods of operation may be considered.

Repair of the anterior and posterior vaginal wall and perineum from below followed by entero-fixation.

2. Interposition of the uterus between the inferior bladder wall and the vagina, and repair of the perineum.

3. Vaginal hysterectomy with suture of the lateral stumps below the bladder followed by perineal repair.

In the cases of elderly women and those in which there has been severe recurrence of prolapse after vaginal hysterectomy obliteration of the vagina may be done.

With very few exceptions the author found that the first method, repair of the cystocele and rectocele from below combined with either the Alexander-Adams operation or entero-fixation from above is applicable to all varieties of prolapse.

Occasionally in the cases of port wine women, when laparotomy is relatively hazardous and large cystocele causes the most serious disability, he has used the interposition operation.

He has never employed vaginal hysterectomy with utilization of the broad ligament stumps as described by Goffe, and would reserve this procedure for those rare cases of prolapse in which vaginal hysterectomy is indicated for some other condition

such as corporeal cancer. In a number of cases this technique was followed by huge recurrences of the cystocele. Such recurrent cystoceles may prove incurable as the central support of the pelvic connective tissue from which the supporting fibers radiate, namely the supra-urethral part of the cervix, has been removed.

The repair of cystocele consists in separation of the descended bladder from the uterine cervix, repair of the pubocervical fascia in the median line, and suture of this structure high up to the cervico-uterine juncture so as to re-establish tense continuous bladder shelf.

Repair of high rectocele consists in exposure of the anterior rectal wall high up, opening of the Douglas cul de sac, obliteration of this pouch by circular suture and repair of the torn rectal fascia. This repair is usually combined with repair of a low rectocele and torn perineal body.

The repair of low rectocele and a lacerated perineum consists in exposure of the anterior rectal wall and separation of the levator edges of triangular ligament *en masse*.

If the anatomy of the pelvic outlet is understood, if cases are judiciously selected and if the technique described is followed the results are fully as satisfactory as those obtained by the radical treatment of inguinal hernia, but a certain number of recurrences are to be expected, especially in the cases of patients with flaccid tissues and general enteroptosis. It should be emphasized that patients whose complaints and pains did not arise from the men or lacerations of the cervix, the small cystocele and the negligible rectocele present will not be benefited by unnecessary plastic repair. F. L. CORVILL, M.D.

# OBSTETRICS

## PREGNANCY AND ITS COMPLICATIONS

Rowley W N. Observations on the Blood Sugar During Pregnancy and the Puerperium. *Am J Obst & Gynec* 923, 3

Determinations were made of the sugar content of the maternal blood 1, or before term, and on the second morning after delivery. The sugar values of the cord blood were also studied. In the series reported some of the patients had diabetes or glycosuria. The average blood sugar of fifty-three women during pregnancy was 0.12 mgm for each 100 ccm. The average value for the cord blood was 0.09 mgm for each 100 ccm. The effect of anaesthesia on this value is negligible. From these findings the author concludes that the placental interchange of glucose can take place by the process of diffusion from the maternal side to the fetal side. The average postpartum value of the blood sugar was 0.14 mgm for each 100 ccm. Hence, the sugar content of the maternal blood during pregnancy is less than that during the puerperium and greater than that of the cord blood.

Women whose pregnancy as complicated by protracted nausea and vomiting showed amounts of blood sugar which were consistently higher than those of women who did not by these complications. Rowley concludes that muscular work is not a factor in the production of postpartum hyperglycemia, that their anæsthesia is contributing but not necessarily determining factor; the production of rise in the blood sugar concentration of cord blood (in the experiments reported every effort was made to minimize the effect of anaesthesia) and that it is impossible to show that involution of the uterus is primary factor in producing postpartum hyperglycemia. In certain types of toxæmia the blood sugar is increased.

Wells, W E. and Van Nest, A C. The Sugar Test in Pregnancy. *Am J Obst & Gynec* 93, 33

When first seen the patient is told to come to the clinic the next morning without breakfast. She is then catheterized and the urine examined. If the urine is normal the test is continued and specimen of blood is taken for chemical examination. When this has been done the patient is given 50 gm of glucose dissolved in 500 ccm of tea and kept in the prone position for forty-five minutes to prevent vomiting.

Forty-five minutes one hour and one and one-half hours after the ingestion of the sugar the catheterized specimen of urine is again examined for sugar. Blood for second sugar examination is usually taken between the one hour and the one and one-half hour periods.

Blood sugar determinations are made by the Folin method, and urine sugar determinations by means of Benedict and Fehling's solutions. The content of sugar in the urine is usually between 2 and 5 per cent. Most of the positive cases will give positive urine in forty-five minutes but in some the test will not be positive before an hour or one hour and half. Since adding the examination at the end of one hour and half the authors have found four cases which did not give positive reactions until the last specimen was obtained.

Wells and Van Nest believe that spontaneous or artificially induced renal glycosuria with blood sugar content below 19 per cent in the first twelve weeks after conception is valuable aid in the early diagnosis of pregnancy. The test has proved correct in more than 95 per cent of their cases.

E L COOKE, M.D.

Hilton, W A. The Wassermann Reaction in Pregnancy. *Am J Syphilis* 93, 35

This is a study of the Wassermann reaction of the blood of 6,437 pregnant women. The tests were made during the period from June 9, 1915 to June, 9, 1916 and formed part of the routine examination of these women. The purpose of the article is to draw attention to the efficiency of ebulliently treated antigens in the Wassermann reaction in pregnancy and to give some idea of the prevalence of syphilis among women of the dispensary class.

The results obtained in this study should be compared with those which are obtained by the same technique in a group of 3,700 naval students and a penal group of 864 women (Table I).

These figures which are from highly syphilitic and an essentially non-syphilitic aggregate, are given to point out the comparative prevalence of the disease in well defined groups as shown by the Wassermann test performed with the same uniform technique.

Table II gives the figures for the entire group. The percentages of positive and doubtful reactions in the first institutions are quite different from those in the last two. The results for the England Hospital can be explained easily by the manner of obtaining the specimens and agree with the observation of others that cord blood is only about one third as effective in the detection of syphilis by the Wassermann test as blood obtained by the usual venous puncture. The table indicates also low incidence of positive reactions in the cases of the Lowell Corporation which is accounted for by the fact that roughly 80 per cent of the patients are of foreign birth or descent. The figures from the Florence Crittenton Home are particularly interesting inasmuch as only young, unmarried



## INTERNATIONAL ABSTRACT OF SURGERY

foreign population. The one exception lies with the Syrians who show about the same percentage as the white persons born in the United States and Canada.

An analysis by age groups is given in Table IV. The most important fact to be learned from this table is that congenital syphilis must play a very small part in maternity. If we assume that the single point case among the patients ranging in age from 1 to 7 years was a case of congenital syphilis, the incidence is less than 1 per cent. This is greatly below that of the five groups over 7 years of age who constitute the majority.

Since pregnancy is a natural physiological function, few if any of these women sought medical attention because of acute or chronic illness. It was found that persons of greater intelligence show a uniformly lower incidence of positive tests while those of lesser mentality show a higher rate. This difference is realized on comparing the 57 naval aviation students, among whom the positive reactions equalled only 5 per cent, with the group of criminal women who were for the most part feeble minded and among whom the incidence of positive reactions was 40 per cent.

The conclusions drawn are as follows:

1. The statistics in this paper should indicate the prevalence of syphilis among the average women of Massachusetts of the dispensary class.

If we consider a positive reaction as diagnostic of syphilis, as in 4.8 per cent of these cases and a doubtful reaction as indicative of inadequately treated syphilis, as in 3.85 per cent, the total incidence of the disease in this class is 8.3 per cent.

2. Properly standardized cholesterinized antigens have yielded a negligible number of false positive reactions in child-bearing women.

C. H. D. VAN, M.D.

Kligora, A. R. Tumors of the Breast Arising During Pregnancy and Lactation. *California State J. M.* 9:3, 221-5.

This article is based upon a series of 500 cases of breast lesions. The material studied was the laboratory records of Brookwood at the Johns Hopkins Hospital and a number of records from the University of California Hospital.

The most common of all breast tumors appearing during pregnancy and lactation as well as at other times is cancer. The order of frequency of certain benign conditions changes materially during activity of the breast. Nearly 70 per cent of galactoceles, or milk cysts, arise in connection with breast activity. In over 5 per cent of cases of breast tuberculosis the condition develops during pregnancy or lactation—no doubt because of the lighting up of unrecognized foci in the breast by the increased circulation incident to function. In order of frequency the most common tumors developing during pregnancy and lactation are cancer, galactocoele, tuberculous, and adenomata. These constitute over 90 per cent of tumors appearing at these

TABLE I.—PERCENTAGE OF TUMORS ARISING DURING PREGNANCY OR LACTATION

Tumor	Age group	Per cent	Per cent
Cancer	1009	49	4.6
Cancer (only patients under 47 years)			
Galactocoele	463	29	20
Tuberculous	29	13	20.4
Adenocarcinoma	34	9	26.4
Miscellaneous	245	9	3
Totals	74	—	—
	5	26	5

TABLE II.—EXPECTED AND ACTUAL INCIDENCE OF CANCER IN LACTATION IN THE REGISTRATION AREA

Age group	Expected incidence of any disease during lactation to amount the same as at other times (cases)	Actual incidence of any disease during lactation (cases)
5-30	0	5
30-34	0	42
35-39	34	25
40-44	20	7
45-49	24	26

TABLE III.—COMPARISON OF CANCER IN LACTATION AND OTHER TIMES

Age group	Total breast cancer per 1000 live females in each age group	Incidence of breast cancer per 1000 live females during pregnancy and lactation in each age group
5-30	7	3
30-34	4.4	21
35-39	4.3	14.5
40-44	5	9.1
45-49	4.3	3

periods. At other times than during functional activity chronic cystic mastitis in its tumorlike forms takes the place of galactocoele and tuberculous in frequency.

The incidence of both cancer and benign tumors is distributed fairly evenly over the various stages of pregnancy and lactation. The point of practical importance in this connection is that at no time out in the differential diagnosis. During the early months of lactation most lumps in the breast are inflammatory but in the series of cases reviewed 50 per cent of pregnancy and lactation cancers are first noted during the first four months of lactation. Therefore it is not safe to delay the exploration of a lump during pregnancy or lactation on the assumption that it is inflammatory.

Most interesting of all aspects of this subject is the question of the relation of breast activity to cancer. It is fairly well established that previous

normal lactation does not render a woman more apt to develop breast cancer in later life than the woman who has never lactated, but it is not so clear whether cancer is more apt to develop during year and a half of pregnancy and lactation than it is during the same length of time at the same age when the breast function is dormant.

Of forty-five patients traced for five years or longer after operation six (13 per cent) were well when last heard from. This percentage of five-year cures is not as high as the percentage of cures in unselected cases of breast cancer generally but indicates, as cancer statistics go, a far from hopeless prognosis for malignant disease arising in connection with breast activity. C. H. D. M., M.D.

McNalley F. P., and Dieckmann, W. J. Hemorrhagic Lesions of the Placenta and Their Relation to White Infarct Formation. *Am J Obst & Gynec* 9:3, 55.

In an examination of 330 placentae, 10 or near 10, the authors are struck with the frequency of hemorrhagic lesions, which were noted in 53 cases (15 per cent).

On the basis of this study they draw the following conclusions:

At least some of the usual white infarcts resulting from changes in the villi may at first be red in color as described by Young. These, the term red infarct is applicable.

The other lesions, to which various terms have been applied should not be called red infarcts because they are not infarcts, being collections of blood to which the term hematoma or hepatization is applicable, depending on whether they are circumscribed or diffuse. They have a common etiology.

3. As pointed out by Young, the maternal blood is of primary importance in nourishing the villi.

4. Collections of blood in the placenta may be the beginning of white infarcts. This blood itself may be changed into white infarct which in the gross does not differ from any other of the collections may cause infarction of the surrounding villi by interfering with the maternal circulation.

5. There can be white infarct formation without endarteritis in the fetal vessels. Whether this is true of all infarcts it is impossible to say at the present time. F. L. CONNELL, M.D.

Cotta, G. The Etiology and Treatment of Tubal Pregnancy. (*Revue Etude et le traitement des grossesses tubaires*) *Lyon chir* 9: 115, 665.

The author's patient had a normal pregnancy when she was 17 years old. Three years later she was operated upon for what was thought to be an appendicitis but found to be an extra uterine pregnancy. The illness reported in this article suggested a second tubal pregnancy but this was ruled out. A diagnosis of salpingitis was made and vaccine treatment given. Several days later the patient passed a large amount of black blood by

rectum which undoubtedly was from a hematocoele opening spontaneously. About six weeks later a hematoma of the size of a mandarin orange was removed by operation. Recovery followed.

Extra uterine pregnancy with a hematocoele opening spontaneously into the vagina or rectum is a rare condition today because operation is usually performed before this stage is reached.

Cotta suggests that as women who have had a tubal pregnancy are apt to have another it might be well to perform hysterectomy or remove the opposite tube at the time of the first ectopic gestation. If the other tube shows severe inflammation there is no question as to this indication but in the case in which the remaining tube was apparently normal Cotta did a salpingostomy.

It has not been proved that the cause of tubal pregnancy is congenital malformation.

On the basis of the literature and nineteen cases of his own, Cotta believes that in tubal pregnancy the treatment should be salpingectomy. Salpingostomy alone without removal of the ovary and that in certain number of cases the gravid tube may be saved. If the tubal portion has been complete and the pavilion remains permeable it is probable that the swollen tube will regain its normal size and again fulfill its function. W. A. BRYAN.

Moody, W. B. Bacteriology of Fetal Systemic Infections Following Miscarriage or Abortion. *Am J Obst & G* 9:3, 78.

In twenty-four of twenty-eight cases studied some organism appeared in several of the fluids. Thus beta streptococci were isolated from more than one place in thirteen pneumococci bacillus coli and staphylococci in three each and bacillus in cosms and alpha streptococci in one each. Cultures were made during life from the blood of five patients. In only one were any organisms found these were beta streptococci. In these cases there was thrombo-embolic endocarditis. The hemolytic streptococci isolated in all instances proved to be of the beta type. All fermented lactose and salicin but not mannite or inulin. Efforts to determine specific strain by gelatin tests failed. Agglutination of suspensions of these strains by serum from rabbits injected with strains of hemolytic streptococcus from several sources such as cases of scarlet fever erysipelas, infected tonsils, and sepsis due to abortion, failed to show any specific characteristic group.

Although it was noticed at autopsy that as rule the alterations consisted of peritonitis or thrombophlebitis varying in location, degree and sequence—also that these two types of alterations were rarely combined—no differences in the bacteriology corresponding to the two types of alterations was definitely established.

Statements, particularly negative statements made by women who have had criminal or self-induced abortion are entirely unreliable. Admis-



sginal septum who became pregnant in the left uterus soon after marriage, miscarried it two months, became pregnant in the right uterus about four months later and was delivered at term by cesarean section of a female infant weighing 5 lbs 10 oz. At operation two distinct terri joined only at the cervical portion were found. Connected with the lateral side of each uterus as an apparently normal tube with a normal ovary. The consultant who performed the cesarean section sterilized the patient by resecting the tubes, but the reason for this is not stated. C. H. D. is M.D.

Greenhill, J. P. "Once Cesarean Section Allways Cesarean Section" in *Untruth in J. Obst. & Gynec.* 9:3 '86

Four cases are reported in which cesarean section had been performed at the first pregnancy. It was noted that in every instance the baby born through the vaginal route weighed more than the baby delivered by cesarean section. One patient was delivered by forceps (prophylactic) and three girls born spontaneous. In the cases in which the classic cesarean section had been done, relative to this as far as found, whereas in the present on both the low cervical operation had been performed no trace of the scar was palpable. In the three cesarean sections performed at the Chicago Lying in Hospital caught was used in closing the uterus.

It appears from this report that use of the modern methods of performing cesarean section the ductum once cesarean sectionally, cesarean section is untenable.

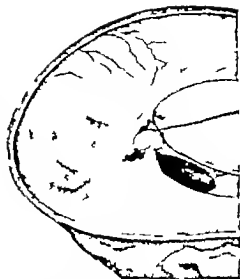
J. L. C. is M.D.

#### NEW BORN

Holland E. "Craniol Stress to the Fetus During Labor and the Effect of Excessive Stress on the Intracranial Content" *J. Ob. & Gynec. Brit Emp.* 9:55

During making of the head labor the cerebral septa tend to restrict the change in pressure. Limitations of compression bordering the antero-posterior diameter, the middle portion of the free edge of the falx cerebri and the tentorium cerebelli are stretched and torn. When the vertex to base diameter is short and the force of brow pressure from the free border of the tentorium and the lower third of the falx are stretched and the rest of the falx is slack. A thickening in the special thickened portion of the septum along their attachment to the pericranium and then free borders the tearing of the falx or the tentorium might be associated with subdural or subarachnoid hemorrhage. Of 6 fresh fetuses examined the tentorium cerebelli found torn in eight cases. In the case of the fetus in the first birth it is torn and subarachnoid hemorrhage occurred.

Forty-four of these cases the pressure on the cephalic end in three first breech presentation. Of the forty-six cephalic presentation forty-four



A complete bilateral tear of the tentorium cerebelli. On the right side the tentorium has been torn through on the left side the tentorium border of the band remains intact.

at presentation of the breech presentation. In the cases of breech presentation forceps were used and in nineteen delivery was spontaneous. In some of the cases of breech presentation necessary some of the deliveries were difficult.

R. J. Larnett M.D.

McDonald A. I. "Reported Dystocia from Fetal Anomaly in Successful Pregnancies" *Am. J. Obst. & Gynec.* 1:9

The patient, female, 35 years of age, delivered in the seventh month of pregnancy. The child presented by the breech. The fetal abdomen was much distended by several quart of fluid. Upon release of the fluid the child was delivered easily.

The baby was stillborn. Its length was 15 in. Its head small and of the brachycephalic type and its thorax well formed. The abdomen had been apparently greatly distended and its walls were thin. The lower part of the abdominal cavity and pelvis were somewhat mutilated in the extraction. The internal genitalia were so mutilated that it was impossible to determine the sex of the child. The legs were well formed but the feet were clubbed and the child had six toes. The hands were normal except that there were six digits and one of these on the right hand was double (fused).

The heart of normal size but located in the left hypochondrium. There also the gall bladder and duct and the vermiform appendix. The small and large intestines were apparently normal structure. The stomach and rectum were on the



right side. In the lower abdomen a large mass extended from the xiphoid to the umbilicus. The kidneys are normal in location. The ureters are enlarged and entered the mass described. When opened this mass proved to be the bladder with thickened wall. The cavity could be followed along the umbilicus where there is a large patent urachus. On each side of the small structures apparently the ovary and tube are found. No uterus could be demonstrated. Examination of the thorax demonstrated apparently complete atelectasis. The pleural cavity was normal in gross structure. Section showed the wall to be almost or only slightly thickened.

On July 16, 1908, the woman delivered spontaneously of a third overterm fetus. It weighed exactly the same as the first.  
E. J. CONNER, M.D.

Crothers, R. L. Injury of the Spinal Cord in Breech Extraction as a Cause of Cerebral and Fetal Death and of Paraplegia in Childhood. *Am. J. Obst. Gynec.* 9:1.

The author states that lesions of the spinal cord due to breech extraction are by far the most common by the pathologist. Direct suprapubic pressure upon the head by the obstetrician or the use of the forceps in the extraction of the breech is often an important factor in the production of traumatic lesions of the cord.

Five cases are reported in which paraplegia developed as a result of lesions of the spinal cord apparently in breech extraction. Four of these showed definite evidence of practically complete transection.

The author divides the following conclusions:  
1. High cervical transection is possible and should be taken account of the possibility of the lesion of the phrenic nerves and the medulla.

Transection below the fetal level if accompanied by sufficient hemorrhage to destroy the cells of the lower segment results in paraplegia and permanent flaccid paralysis of the lower limbs.

Transection of a few segments and not of all of the lumbar enlargement results in paraplegia associated first with flaccid paralysis and later a few days or weeks with some degree of rigidity corresponding to the destruction of the anterior horns and below this some reflex activity of distinct type during this stage the bladder and rectum become automatic. (The theoretical grounds it seems probable that this stage of reflex activity lasts only so long as there is reflex activity in the cord.)

It is admitted that the vast majority of obstetrical spinal cord injuries are caused by improper manipulation in breech extraction.

From a theoretical consideration of the forces which are in traction it seems justifiable to suggest that traction on the cord when combined with suprapubic pressure or uterine contractions on the head may cause collapse or death from herniation of the medulla through the foramen magnum.

If this possibility can be proved by laboratory or clinical studies it will be proper to challenge the statement, now almost universally accepted, that a placental infarct is the only important cause of fetal death in breech extraction.  
H. B. STURTEVANT, M.D.

Bacon, C. S. Some Obstetrical Problems Involved in Stillbirths and Deaths of Newborn Infants. *J. Penn. Med. Soc.* 5:1.

The number of stillbirths in the United States is about 4 per cent of the number of births, and the number of deaths in the first six weeks of life is about 1.5 per cent of the number of births. In other words it is estimated that there are about 100,000 stillbirths in the United States every year and about 87,000 deaths of infants less than six weeks old. I know there are 100 stillbirths and 100 infants die this.

The cost of a child at birth is much greater today than it was twenty or thirty years ago. Comparing the value lost to the mother at current wage rates and considering the conditions for securing a medical education, it is estimated that the cost of a baby to a family of a mother earning \$500. With the decline in the birth rate and death rate and with a 1 per cent per cent in the expectation of life, it is estimated that the loss to the mother is \$100,000. It is a considerable cost that they were twenty years ago and responsibility for their safe delivery is correspondingly increased.

Fetal deaths may occur antepartum or intrapartum. The most important causes of antepartum death are placental and uterine injuries to the placenta. The majority of intrapartum fetal deaths are due to distention of the placental circulation caused by excessive contraction of the uterus or separation of the placenta. A few are due to asphyxia in the cord. Some result from injuries to the brain and spinal cord and perhaps from poisoning by analgesics or anesthetics.

On account of the great importance of excessive uterine contraction in causing stillbirths, labor should be treated carefully, especially during the second stage. Probable one-fourth of all stillbirths and one-fourth of all deaths occurring during the first week of life could be prevented by proper management of labor consisting in careful timing of the uterine forces, the control of excessive contractions, prompt interference when indicated and the avoidance of unnecessary and improper operations.

Excessive contractions of the uterus may be prevented by relaxation of obstructed labor or may be caused by the use of syntocic or parasympathetic. The author has known of several infant deaths which were due to improper use of pituitary extract. It reports that he has never lost a child from the use of morphine and scopolamine.

Neither has there been any fetal death in his cases which could be attributed to the use of either of nitrous oxide and oxygen.  
C. H. D. M. M.D.

Groves, W. R. Hemorrhage in the Newly Born  
*Med J Australia* 9 14, 76

The author reports a case of hemorrhage from the navel and penis of a newborn infant which could not be stopped by ligation or local applications. After forty-eight hours the child's condition was so grave that the injection of 9 c.c.m. of the father's blood into the longitudinal sinus was done. The oozing then promptly ceased. The technique used is described as follows:

Sterilize two syringes (one with capacity of 1 c.c.m.) which have interchangeable needles. The latter must be stout (about the thickness of an average-sized safety pin at least). A warm sterile saline solution and a 2 per cent sodium citrate solution are necessary. For the latter a solution of sodium citrate tablets in sterile water may be used without further sterilization. Take up 1 c.c.m. of this citrate solution in the 1 c.c.m. syringe and an unmeasured quantity in the second syringe, and place both in warm saline or preferably citrate solution in a sterile dish (in the latter case no saline solution need be prepared). Into the 10 c.c.m. syringe take up 9 c.c.m. of blood from the vein of the donor. This gives dilution of a little over 10 per cent. Disconnect the needle and lay the syringe in the

warm sterile citrate solution. Then place the baby on its back across a table, with the occiput resting at the edge. The head should be steadied during the operation by a nurse leaning across the child's body and placing her hands at the sides of the head. Sterilize the area about the anterior fontanelle (shaving is not necessary) and define the posterior angle of the fontanelle with the left forefinger. Insert the needle of the second syringe exactly in the midline and direct it obliquely downward and forward at the spot located by the left forefinger. After it passes through the scalp, second and very appreciable resistance will be felt. In overcoming this the needle slips into the sinus, the entry being signalled by a thin stream of blood mixing with the citrate solution in the barrel of the syringe. Care is necessary to keep the needle from moving. Disconnect the barrel of the syringe, replace it by the 10 c.c.m. syringe and very slowly deliver the citrated blood into the sinus. Unless the needles are of large gauge, an appreciable amount of force will be necessary to empty the syringe, but as long as the baby's head and the syringe have not been moved, the surgeon can be sure that the needle is still in the sinus and can inject with confidence.

C. H. D. via, M.D.

## GENITOURINARY SURGERY

## ADRENAL KIDNEY AND URETER

Stevens, W. F. Malignant Tumors of the Supra  
renal Gland / (w/ M. J. ...)

Steven reports the case of a boy 7 years of age who died from hypernephroma (went to hospital after the beginning of symptoms). There seemed to be definite relationship between the development of the tumor and the massive renal function until the last few equivalent (the 10 percent) hours after the lifting of the boy's trunk. There is a clear retroperitoneal (hypernephroma) subsequently the patient died (in the case of the left kidney became tender and in the case of the right kidney in front of the ribs. The left kidney rose to 125% in the previous period last

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The only hope of recovery lay in the  
 return of the nation of the future before it  
 occurred. For the first time in the history of  
 the world, the only hope of recovery lay in the  
 return of the nation of the future before it

B I R L M I

Harrison, G. A. and La France R. D. Diet and  
the Blood and Urine as Measure of Renal  
Efficiency. *Lancet* 1931

The rubrication of many of these has been  
used as test of pattern of personal edi-  
tories. Comparison of few in others on homes  
has extended the blood of it. I even fewer  
to determine the hue for blue and fine  
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The conclusions drawn are summarized with  
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The concentration of the sodium hydroxide remains constant throughout the process.

3. Normally the \_\_\_\_\_ for the blood in the \_\_\_\_\_ unit.

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g. This test is useful in the diagnosis of other renal tubular tests, but only in very rare cases. (Lippincott, 1971)

Sutton M G The Action of Hexamethylen  
Tetramine *M M J (univ) 923* 3

The following table discusses the method of input model with hexamers.

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due to the fact that the ball practices are at  
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a lot of interest in it. In fact there is an ex-  
posed house like the p. col in group. I have  
been milk. I re the four found it slightly and  
or even a bit more. I re and interest in general  
these things are in the same way.

The growth of bacteria is due to the fact that a single cell put under favorable conditions of nutrition. The normal rate of a bacterium is 1. A lot of pills are needed to stop growth completely but with low pill level it like those but now past the half of a pill it pill but the type of the different produce more alkaline than pill or it like be results are better on the trial sum of it.

A 1000  $\mu$ l of formalin will inhibit the growth of *S. typhimurium* in that medium. However, unless one higher than the 100  $\mu$ l are not sufficient.

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 the blood and that the stomach was the  
 source of the food. He said that the  
 liver was the source of the energy and  
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Education & the Great Divide of Class &

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The purpose of this article is to establish the importance of diminished specific gravity of the urine from one kidney as a sign of disease of that kidney or disturbance of its function. The author's observations are based on 419 cases. In this series there were 7 patients in whom all the evidence (careful cystoscopy was against renal origin of their complaint) of one of the 7 cases the specific gravity was equal to the other sides. The remaining six are raised out as the author believes that in these cases there had been a previous kidney disorder. The specific gravity was equal on the two sides also ten cases of bilateral nephritis and ten out of twenty six cases of bilateral pyelitis. In the remaining cases the severity of the condition shown by the amount of pus and albumin was greater on the side of the lower specific gravity.

These facts show that difference in specific gravity on the two sides indicates some abnormal condition on one side if both kidneys are diseased, an inequality in the extent of the involvement on the two sides. A lowered specific gravity is found on the affected side in cases of renal calculus, tuberculosis of the kidney, tumor of the kidney, lateral pyelitis, hydronephrosis, polycystic disease of the kidney, movable kidney, renal colic, renal infarct, gunshot wounds of the kidney, and certain cases of symptomatic renal hematoma.

H. W. PIERCE, M.D.

Lowley O. S. and Waller H. R. An Experimental Study of Various Chemicals Used in Pyelography. *J. Urol.* 9:3:18.

The authors confirm the work of Wendt and his found that injecting a material into the kidney pelvis under pressure sufficient to cause overdistention is a dangerous procedure leading to an inflammatory reaction in the kidney, pulmonary embolism, edema, and death. They note that 50 per cent ammonium bromide and 20 per cent sodium iodide cast as deep shadows as barium that is in suspension, and that potassium iodide gives the most distinct shadow of all. Sodium iodide is as opaque as sodium bromide and 10 per cent thorium nitrate solution less toxic than either. It is more viscous, less hypertonic, and therefore less harmful. It is now used in 20 per cent solution.

Pyelography is indicated to ascertain the extent of damage of the pelvis, the degree of dilatation, the exact location of stones and the presence of hydronephrosis, malignant growths, malformations, strictures or anomalies.

The principal contraindications are subacute infection, debility of the kidney, old age, and great calcareousness.

The authors insert lead catheters through cystoscope, take specimens for laboratory examination and make the fluoroscopic tests first. They then make roentgenograms of the upper and lower tracts. Sodium iodide solution is then injected and new roentgenograms are made. A fifth roentgenogram is made with the patient in the erect position, the

catheters having been withdrawn, the retained urines and sodium iodide injected during their withdrawal. The sodium iodide is drawn off by reinserting the catheters. For cystograms silver iodide emulsion has been found a satisfactory medium. Both kidneys may be examined at once by this method. B. F. ROSS, M.D.

Quimby W. C. Perirenal Insufflation of Oxygen. *J. Urol.* 9:3:18, 3.

The most reliable of recent reports are not enthusiastic regarding the perirenal insufflation of oxygen and the author finds that this procedure does not give pictures of any great value. In the telescopic plates made over the back diaphragm. He believes there is little danger of mediastinal emphysema and penetration of the bowel if the operator has even binary judgment and knowledge of anatomy. Quimby used oxygen collected in a sterile liter flask connected with a liter flask of sterile water and lumbar puncture needle marked in centimeters. The patient was placed horizontal and after the induction of local anesthesia the needle was inserted into the loin pointing posteriorly and the lower pole of the kidney through the perirenal fascia but not into the kidney to a depth of 1 cm according to the patient. When the needle was positioned the water flask was inverted and elevation of it the water will displace the oxygen with moderate pressure. The best results were obtained by injecting the kidney pelvis and making a 15-20 exposure from the live 14 fourteen hours after the gas insufflation.

Dense adhesions about the kidney such as following operation are definite contraindications to the insufflation of gas. B. I. ROSS, M.D.

Brasch W. F. Renal Torsion. *J. Urol.* 9:3:18, 23.

At times the course of pyelography and renal exploration or crop may reveal deviation from the normal in the relative position of the renal pelvis and calices is found. The pelvis may lie anterior to the calices or the normal relations may be reversed so that the calices are medial to the laterally lying pelvis. This may be due to an arrest of the renal mass in its progress prior to while the pelvis is still anterior and before complete rotation has occurred. Renal torsion may be caused also by other than congenital factors such as acquired renal ptosis resulting from various factors. Floating kidney being the most common. The long axis is often changed from the normal vertical so that the pelvis extends horizontally. Another responsible factor is displacement of the kidney by external pressure. This may be produced by an extrarenal tumor, perinephritis and spinal deformity. In such cases the kidney may be markedly displaced. It is not unusual to find it over the vertebrae under the tenth or eleventh ribs or in the bony pelvis. Intrarenal tumors may cause torsion through displacement by encroaching on the pelvis. Renal rotation may result also from perinephritis and subsequent cyst



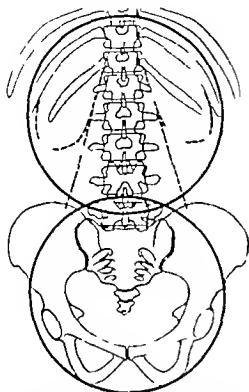


Fig. 2. Areas to be included in roentgenograms of the urinary tract. The upper exposure should always show the last two ribs on each side, the bodies and transverse processes of the last two dorsal and first four lumbar vertebrae, the shadow of at least the lower two-thirds of the kidney, and the markings of the psoas muscle. The lower picture is taken in such a way as to overlap somewhat the upper one, and includes the entire pelvis and the last lumbar vertebra.

Pyelography and ureterography are often indispensable in the diagnosis of this condition when the plain ray study alone gives doubtful findings.

Emendrath reviews the classical symptoms of calculus in the kidney and then points out how they may mislead. Other kidney conditions frequently cause exactly the same symptoms. The diagnosis of renal calculi should never be made hurriedly from the symptoms alone.

Congenital anomalies are responsible for many problems in the diagnosis. In such cases also the plain ray study combined with opaque injections is frequently of great value.

Operative intervention may or may not be urgent. It is urgent in cases of calculus anuria and calculus blocks. While some cases of this type can be relieved by ureteral catheterization one should not wait longer than forty-eight hours for relief of the anuria. If then the stone cannot be located by operation, nephrotomy or pyelotomy should be done immediately.

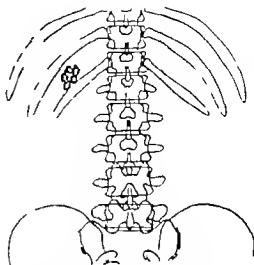


Fig. 3. Multiple gall-stone shadows. Not the characteristic faceted shadows, each one of which has dark periphery and lighter center.

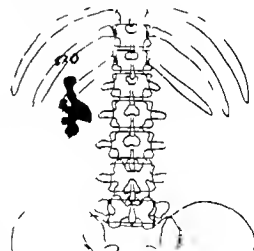


Fig. 4. Tracing of X-ray from case showing simultaneous presence of branching or coral-like calculus in the right kidney and gall-stones.

mediate removal of the stone being delayed for a later time. The tendency towards conservation of an organ which still retains some functioning parenchyma is one of the important advances in modern urology. In the majority of cases of renal stone operation is not urgent.

The author discusses the problems met with in cases of unilateral and bilateral calculi. For the removal of kidney stones he advocates pyelotomy in preference to nephrotomy. Recently the field of



age of 55 years, but are found from childhood to advanced life. The time from the appearance of the first symptom to the recognition of the growth varies from a few weeks to three years. The tumor may be the only sign.

In the diagnosis of renal tumors the three considerations cardinal symptoms, hematuria, tumor and pain. He gives points in the differential diagnosis and states that ureteral catheterization, functional tests, and pyelograms are of aid. He reports 10 cases of papillary carcinoma. One patient recovered but the other developed recurrence and is now receiving deep X-ray treatment. He reports also a case of fibrosarcoma of the dense sheath of the caecum. H. L. Gross, M.D.

Rehn, C. and Roettger, P. The Cause and Prevention of Secondary Hemorrhages After Nephrectomy (Ueber Ursache und Verhütung der Nachblutungen nach Nephrotomie). *Zuckerf. vol. 44*, p. 2, 1900.

The statement made by Barth that every division of an arterial branch leads to the death of tissue (the formation of an infarct) still holds good today. Therefore the discovery that the renal system of the entral and dorsal halves of the kidney are independent of each other is of great importance. I maintain the plan of division found by Zondek lies somewhat posterior to the center. Accordingly the loss of considerable renal mass in parenchyma may be avoided by the proper placing of incisions. Marsedel splits the kidney by a transverse incision.

Secondary hemorrhage may follow nephrectomy immediately after period of few days. The authors opine the early hemorrhages are due to poor operative technique and can be prevented by careful suturing of the parenchyma.

Some time ago Rehn called attention to the possibility that circulatory disturbances in the split kidney may be the cause of the frequently fatal secondary hemorrhage. As nephrectomy has an unfavorable effect on the delicate and organized function of the kidney, he directed his attention particularly to the physiological fixation of the split kidney to prevent kinking of the renal pedicle and choking of the renal and to insure patency of the renal pelvis and the ureter.

His theories were tested by the nephrotomies performed at the Freiburg clinic during the last two years. In case of unfixed and undrained kidneys, fatal secondary hemorrhage occurred in ten cases, healing resulted without hemorrhage and without the formation of urinary fistula but in one case bleeding occurred because the catheter was removed too early and in another case urinary fistula developed because the ureteral catheter was left in place too long (fourteen days).

While secondary hemorrhage does not occur in all cases of poorly fixed kidney, it is a complication in a number of cases, and the kinking of the veins is an important factor.

Stasis of the urine leads to hyperemia and bleeding in the parenchyma of the kidney which is split or the first stages of healing. This may be prevented. Kummell suggested by introducing ureteral catheter through or into the bladder by way of the nephrotomy wound. If stasis of the urine occurs in the presence of undisturbed supply of blood as the result of kinking or obstruction of the ureter a secondary hemorrhage may develop even after the renal wound is more firmly healed. If the wound gives way a urinary fistula will develop and thus eliminate the danger of secondary hemorrhage.

The following precautions are necessary for the prevention of the complication mentioned: (1) proper placing of the incision (Zondek or Marsedel) accurate coaptation and careful suturing; (2) measures to prevent stasis of the urine; and (3) fixation of the kidney in its physiological position.

The technique recommended by the authors is that ureteral catheter is pushed through the renal wound into the renal pelvis and through the ureter into the bladder and its free end fixed. This catheter is removed between the sixth and tenth days. The kidney is carefully sutured up to the opening for drainage. A pyelitis thick rubber drain may be pushed over the catheter into the renal pelvis. The renal fixation is done in such manner that the kidney decapsulated at its lower pole is brought back into the normal position and pushed forward until its lower border is parallel with the costal arch. A large needle threaded with heavy silk is then inserted at the lower border of the eleventh rib through the lower pole of the kidney, and brought out at the upper border of the twelfth rib. The thread is left in place for fourteen days.

Rondelet, (Z)

Leguen. The Immediate Result of Nephrectomy. *Urol. Press*, 9, 3, 1900.

In considering the advisability of nephrectomy three factors must be taken into account, viz. the renal factor, the surgical factor, and the presence of tuberculosis.

In testing renal function Leguen relies on Arnold's constant. He states that when there is constant renal function better nephrectomy will be safe. All the other tests of renal function are only relative. After nephrectomy, from 100 to 150 cc. of urine are usually passed during the first three or four days, the quantity then gradually increasing. If it does not increase glucose solution is given per rectum or under the skin.

With regard to the technique of nephrectomy Leguen states that he uses no drainage and fills the wound with glucose solution.

In cases of tuberculosis there is usually temperature of 39 degrees C. after the operation but this continues only for a day or two. After an operation there may be generalization of the disease to the pleura, peritoneum, meninges, or bones.

A. D. LIPPINCOTT, M.D.



## BLADDER URETHRA, AND PENIS

**Leporeman, C.** A Case of Mixed Tumor Epithelioma of the Bladder of Probable Adenoid Origin (For case of tumor epithelioma—adenoma—adenoma of the bladder) *J. d. med. et chir.* 9

In a woman 55 years of age Leporeman found impale (on) upon the summit of the bladder tumor which in most respect differed from neoplasia commonly in being the bladder. It has found a exact similar case in the literature through there a few bladder which resemble it there is no symptom preceding bladder disease. The tumor was diagnosed as a uterine adenoma. A year later it was found to be the size of a black head and it was only the wall of the bladder but not the adenoma. It was removed by resecting the tumor of the bladder. The patient made a good recovery.

It is a common observation of the tumor shown in the literature is epithelioma. The nests of neoplasia are in the bladder. A good report Leporeman the only proved case of epithelioma of the bladder reported was published in *Kronacher* 1904.

Leporeman believed that the upper pole of the bladder there may be peritoneal of embryonic origin originating from the upper pole of the bladder may be due to proliferation of such cells. When the tumor was the first to be bladder it was a mixed type reported in case. It remains also described an epithelial tumor of the bladder which he considered of the same origin, but his description was very brief. Leporeman has obtained detailed description of the tumor which he has described.

If the hypothesis regarding the pathogenesis of the tumor in the case reported by Leporeman and in the author's case is correct it must be concluded that the embryonic debris of the upper pole of the bladder which that of the embryonic region may originate pure epithelial (more in the main case) or epitheloid-conjunctive tumors (as the author's case). These are not true neoplasms but more than mixed tumor of the parietal a true epithelial tumor. They are rather just vascular tumors, this explains their vascular development and the absence of bladder symptoms.

W. A. Bar

**Parker, W. B.** Bladder Neck Obstructions. Their Surgical Relief. Reference to the Young French. *Surg. Gynec. & Obst.* 9: 1, 1914, 4, 10.

The author states that while the various phases of bladder neck obstruction are common the pathological physiology of the musculature with regard to increased tone spasm and rigidity, and retention has not been satisfactorily explained on the basis of the symptoms and the pathology found at operation or at the time of diagnosis. The bladder neck and its muscle fibers are seldom primarily at fault in these disturbances.

Long continued passivity of the bladder neck is surely culminate in pathological changes and in hypertrophy, proliferation of fibrous tissue and reduction of resiliency.

The most common factors in the production of bladder neck obstructions other than prostatic disease are postinflammatory changes in the mucosa following posterior urethritis and cystitis. These conditions at the onset are asymptomatic or insignificant but have a distinct set of symptoms such as intermittent urethral discharge which infecting organisms to some degree of efficiency the vesical reflex with increased frequency of voiding even marked impotence and occasional though at the end of urination. Parker states that his attention has been paid to contracture of the bladder neck with or without prostatic hypertrophy and that in the face of this inconspicuous urinary condition he refused to attack the prostate in the literature even when the bladder was open and the changes could be seen and felt. Parker operated by Young's method has given brilliant results in curing the inflammation but not only is it strong upon the floor but around the entire circular vesical ring.

Postoperative contraction is another type of obstruction which may occur after evacuation of the prostate by either route.

The various modifications of the Young procedure compared to their respective merits are discussed.

The author concludes that in many cases of obstruction of the neck of the bladder the cause is not only local infection but also remote local and systemic toxemia. The Maceo modification of Young's technique he regards as the best method for most cases of this character and the modified Young's procedure of median perineal incision the most efficient and safe instrument for the surgical relief of such cases.

The mortality rate has been practically abolished and hemorrhage does not occur. The preparation of the patient is of the greatest importance.

J. S. Fournier, M.D.

**Flissoon, L.** Associated Closed Traumatic Rupture of the Posterior Urethra and Bladder (Communication à l'École des répétiteurs traumatiques de médecine militaire postérieure de la guerre) *Ann. chir.* 1914, 335.

Concomitant ruptures of the posterior urethra and the bladder with critical disruption of the symphysis pubis are rare. Flissoon reports such a case in a man who was thrown from his horse. The symptoms suggested rupture of the bladder with pelvic fracture.

A suprapubic incision disclosed critical disruption of the pubes and rupture of the neck of the bladder. The tear was situated so low and the retroperitoneal region as so contained that bladder suture was not attempted. A hypogastric drain was inserted and the space of Retzius tamponaded.

Several days later an attempt at catheterization revealed rupture of the posterior urethra not recognized at the first examination. Suture of this rupture was delayed for several months to await the closure of the space of Retzius and the establishment of the hypogastric meatus. The patient left the hospital in excellent condition.

In the literature Phason found only three other cases of simultaneous rupture of the bladder and urethra following pelvic injury not opening the superficial tissues, and these were not exactly the same as the case reported in this article.

With regard to the surgical treatment the author states that the method of choice consists in suture of the urethra and suprapubic drainage of the urine. When suture of the urethra is impossible, the treatment indicated is suture of the bladder, perineal drainage of the urine by means of a retention catheter and subsequent repair of the urethra by the method of Pasternak and Iselin. If neither the bladder nor the urethra can be sutured, suprapubic drainage of the bladder and drainage of the posterior urethra through the perineum should be instituted at the primary operation and the urethra repaired by the Pasternak and Iselin method at a second operation later on.

The same result can be obtained more rapidly by opening the perineum and the bladder, catheterizing the urethra either by the meatus or by the retrograde route, leaving the urethra to cicatrize over the sound left in situ and allowing the suprapubic opening to close secondarily after urethrophrenical cicatrization.

W. A. BAZER.

Schuller H. Regeneration of Resected Urinary Bladders in Rabbits. *S. f. G. u. r. & Obs.* 9, 3, xxvi, 24.

Regeneration is usually defined as the reformation of lost part or parts of morphological unit, or the new formation of lost cells from cells of the surrounding tissue. It is the replacement of lost part by a newly-formed part corresponding in form, structure, and size.

There are two forms of regeneration: the physiological, such, for example as the constant reformation of epithelial cells, hair blood cells, etc. and the reparative which we see as sequel to loss of tissue substance following trauma. Closely related to regeneration is the process of compensatory hypertrophy observed in the glandular organs of vertebrates (kidneys, ovaries, etc.).

The author's experiments with regard to regeneration of the bladder were performed on rabbits under 6 months of age. The bladder was extirpated down to the urethral orifices and anteriorly closed to the urethra. The cavity left was scarcely large enough to hold  $\frac{1}{2}$  cm. of fluid. Of the nine animals, only two were lost through infection. Within eight months the size of the newly formed bladder in the cases successfully operated upon was within one-third the size of the normal bladder. No changes in the ureters or pelvis of the kidneys could be found.

The histologic findings indicated that these reformed bladders were the result of true regenerative process. The muscle fibers and the muscle bundles in the new-formed wall were slender where as in hypertrophic and hyperplastic conditions the contrary would be expected. Hyperplasia no doubt takes place shortly after the resection but regeneration sets in soon.

H. W. LANGMEYER, M.D.

## GENITAL ORGANS

Sand, K. Ligation of the Vessels (Epididymectomy) by Steinach's Method as a Means of Rejuvenation in Old Age and in Other Conditions such as Impotence and Depression (Vasoligatur—Epididymektomie—nach Steinach angegeben als Verjüngungsmittel bei Geringem und andern Zuständen in Impotenz und Depression). *Zeits. f. Laryng.* 9, lxviii, 597, 50.

Six months ago Sand performed on dogs his first experiments on resection of the epididymis. He is now able to report that the results have been lasting as well as brilliant. The first similar operation on man he performed in September, 1910. The effect of the operation cannot be regarded as true rejuvenation. The phenomena of old age are merely somewhat retarded by the processes set up by the vasoligation.

In this article the author reports fifteen cases.

Attention is called to the difficulty in judging the results of such an operation and the importance of collecting a large number of cases on which to base our conclusions. In every case the author carefully explained the problem to the patient and made it clear that the operation was still in its experimental stage and that its certain result was sterility. In order to exclude suggestion he had the patients write up their own case records. The condition of the patient was recorded very carefully and his weight, blood pressure, and dynamometer readings were given.

The technique of the operation is of particular importance. Sand was not content with simple vasectomy even to the cauda, always performing an epididymectomy. This must be done with the greatest caution. Several centimeters of the epididymis, high up on the caput, should be exposed with small instruments with care to spare the blood vessels and nerves for the nourishment of the testicle. After exposure, Kocher clamps are applied at the upper and lower limits of the area to be resected. Both stumps are cauterized with Paquelin cautery to insure cicatrization. The tunica propria is closed with painstaking suture.

The case histories are given in full. From these it is seen that the patients suffered no harm from the operation and were pleased with the result. There was wide variation as to the time of the appearance of the reaction. In this connection it must be remembered that there is an extraordinary difference in the condition of the tissues of the body especially in older persons, in many of whom they



The second stage—the prostatectomy—is done when the patient has become good surgical risk for a few weeks to a few months later.

The enucleation of the prostate is performed under gas anesthesia; ether is rarely used. Ether anesthesia is not contra-indicated if it is just sufficient to cause relaxation and brief and if the patient is in general condition warrants its use.

The prostate is enucleated by rupturing into the roof of the prostatic urethra, finding a line of cleavage, and sheeling the prostate out assisted by two fingers in the rectum. After its removal no tube is placed in the bladder. The wound is covered with a sterile dressing.

A routine to lessen hemorrhage has been the administration of horse serum subcutaneously and 20 gr. of calcium lactate by mouth every two hours before and after the operation.

A nurse is detailed to the case to remove blood clots and change the dressings whenever necessary. After three or four days the bladder is irrigated daily through the suprapubic sinus. After a week or ten day irrigation may be done by catheter through the urethra. Acid sodium phosphate and plenty of water are given. The wound is kept clean by frequent dressings and stimulation. At the end of two or three weeks wounds may be closed.

C. R. O'CONNOR, M.D.

Barney, J. D., and Shedd, W. M. A Study of Anesthetics in Prostatectomy. *Surg. Clin. N. Am.* 9, 2, 1913.

The authors have undertaken a study of 50 patients operated upon for different types of obstructing prostate. The average age was between 60 and 63 years. The youngest was 44 and the oldest 83. The blood pressure was 50+ systolic and 84+ diastolic. There were 5 anesthetics: spinal, nitrous oxide-oxygen in seventy-eight, ether in sixty-eight and local anesthesia (infiltration of the gland and sacral) in four. The total mortality was 8.8 per cent. In the forty-seven fatal cases spinal anesthesia was used in twenty-eight (74.5 per cent), ether anesthesia in eleven (6.1 per cent) and nitrous oxide-oxygen anesthesia in eight (18.4 per cent). The chief cause of death was sepsis in twenty cases (43 per cent), pneumonia in seven, hemorrhage in six, renal insufficiency (uremia) and circulatory disturbances (embolus, apoplexy, myocarditis, etc.) in five cases each. In four instances it was impossible to determine the cause.

Perineal operations were done in thirty cases, with nine deaths (30 per cent) and suprapubic operations in seventy-one (thirty-eight stages operations) with nineteen deaths (50.7 per cent). Of the 100 cases twenty-nine are given trophocaine, twenty-six novocaine, sixteen apothecine, eight novol, three procaine. The drug employed in nineteen cases was not stated, but probably was tropocaine. Cancer as found in about 5 per cent of the cases, and nearly one-third of these patients died, as compared with less than one

fifth of those with adenomata. In any considerable group of cases of spinal anesthesia spinal reactions ranging from nausea and vomiting, sighing respiration, and soft slow pulse to an alarming syndrome characterized by incontinence of feces, cyanosis, profuse sweating, a thready soft slow pulse, sighing restlessness, and stupor is to be expected in nearly 10 per cent.

THOMAS F. F. VEGA, M.D.

Bryan, W. A.: Recurrence of the Benign Prostate. *Surg. Gynec. & Obst.* 9, 3, 1909, 59.

The author intends the word recurrence to mean the formation, at longer or shorter intervals following what had been considered a complete prostatectomy, of masses of prostatic tissue reproducing the original symptoms caused by urinary obstruction.

He uses the word benign in the sense that clinically and microscopically the secondarily appearing growths were not malignant.

He points out that there cannot, of course, be a true recurrence of removed pathologic tissue and that apparent recurrences are due to the growth of prostatic lobes or tissue not palpable at the time of the original operation which began to hypertrophy after the removal of the rest of the gland. He reports three such cases in his practice and draws attention to the necessity for bearing this possibility in mind in passing judgment on the work of previous operators.

H. S. SAMPSON, M.D.

Schinz, H. R. Castration of the Male by the X-Ray (Ein Beitrag zur Röntgen-Kastration beim Mann). *Schweiz. med. Wochenschr.* 9, 1886.

The author castrated a man 34 years old by means of the X-ray. Just as in the female the functional condition of the ovaries makes a difference in the dosage necessary to obtain one of the various degrees of castration, so also in the male different doses are necessary in order to obtain one of the three phases of castration discussed by the author. The determination of the dose is very difficult as clinical signs indicating the time of spermatogenesis upon which the size of the dose should be based cannot be determined.

The phases of castration and the doses necessary to obtain the desired degree of castration are given as follows:

Temporary sterilization with clinical oligo-spermia. Necessary dose: at least 34 per cent of the skin unit dose in the male, 30 per cent in the female.

Total permanent aspermatogenesis. Dose: about 60 per cent of the skin unit dose in the male, in the female with Wint's excretion, 33 per cent.

Total castration with destruction of all the constituent elements of the testicle. Dose for male not yet determined in the female 34 per cent of the skin unit dose.

ROBERTSON (2).

## MISCELLANEOUS

Nichols, B. H.: Important Points in the Technique of Roentgenological Examinations of the Urinary Tract. *Am J Roentgenol* 10:3:5-10.

When a case is referred to the roentgenological laboratory for examination diagnostic plates are made of the entire urinary tract. This is usually done without preliminary preparation and if suspicious shadows are found a second examination is made after thorough cleansing of the bladder by saline cathartics and enemas. The technique employed consists of the use of duplicated films with double screens and a Potter-Bucky diaphragm and a soft lead rubber bag for compression.

If a definite shadow is localized in the kidney as an attempt is made to locate it accurately by making pyelograms. If it is in the pelvis, the injected fluid usually obscures the stone. A suspicious shadow in the ureteral region either side is checked by catheterization of the ureters. In opaque catheter and films made at different angles to determine the proximity of the shadow to the catheter. At times even this procedure is not sufficient to show whether or not the shadow is that of a stone in the ureter. If the ureter is dilated the shadow may be at some distance from the catheter. In such cases ureterogram will give the required information.

The results of the position and position of the kidney is included in every report together with statement as to the presence of pyelonephrosis or any other pathologic condition of adjacent organs which may be an account for the symptoms. When the films show no lesions mention is made of the possibility of non-visibility of stones in small percentage of cases.

If all the findings are negative and the clinical symptoms and history indicate disease such as lithiasis, ureteral procedures, catheterization with opaque catheter and the injection of opaque media into the kidney pelvis and ureter are indicated. In hydrocephalus, hydronephrosis, deformed kidney pel-

vis and obstruction of blaks in the ureter may be demonstrated. A 20 per cent solution of sodium iodide is the most satisfactory solution for pyelography. Roentgenograms are made in both the horizontal and the vertical positions. A modified Young's stonograph table with a Potter-Bucky diaphragm built into it has been found to answer practically all requirements. (JAMES HARRIS, M.D.)

Flenderath, D. N.: Newer Aspects of Urinary Surgery. *J Am Soc M Sc* 9:3:1-15.

To make a diagnosis of a surgical affection of any part of the urinary tract one must be ready to apply all of the modern methods. Of the special methods of diagnosis fluoroscopy especially impressed with pyelography. Techniques which formerly followed this procedure were due to the pressure which the liquid was injected and to the toxicity of the drug. These dangers have been entirely eliminated by the use of sodium bromide which is non-toxic and by allowing the solution to flow slowly gravity from a height of 3 ft.

A normal pyelogram will exclude the kidney as a cause of abdominal tumor. In the presence of hydronephrosis and pyelitis a characteristic picture is demonstrated. In kidney disease renal pelvis, calyces and sometimes ureterography are equally useful.

Methods of treatment have improved correspondingly. The use of early diagnosis by modern methods, from 33 to 60 per cent of cases of renal tuberculosis are permanently cured. Ligation and drainage of the renal pelvis has made it possible to remove a large number of kidneys which formerly could have been removed. The author has obtained the best results from 3 to 5 per cent after ureteral. It states incidentally that he considers the possibility of renal infection in every case of obscure fever.

Flenderath attempts to remove small calculi by relaxing the ureter by procaine and papaverine and dilating it the majority of cases such treatment is successful. (B. F. ROBERTS, M.D.)

# SURGERY OF THE EYE AND EAR

## EYE

Hogg, G. H. Pemphigus of the Conjunctiva. *Med J Australia*, 9, 11, 356

The author reports four cases of this rare condition which were collected during twenty six years of ophthalmological practice in Tasmania.

None of the patients exhibited any signs of syphilis. The etiology is unknown, but cultures from the conjunctival sacs revealed Friedländer's diphtheria bacillus and Gram positive and Gram negative cocci. Probably some of these were due to contamination.

Pemphigus of the conjunctiva begins with redness and sticky, non-purulent secretion. In some cases there may be small papules or bullae, but the actual bulla is seldom seen because the epithelium of the conjunctiva is so delicate that it quickly breaks when it is raised up by exudation. As the process progresses, coagulation and shrinking of the conjunctiva take place slowly, the conjunctival cul-de-sac becoming shallower and finally obliterated, the folds of conjunctiva stretch from the lids to the eyeball, and the movement of the eyeballs becomes impaired. The secretion of the eye, which is at first increased, becomes diminished, and the surface of the eye becomes dry. The cornea becomes opaque and may ulcerate in advanced cases it often becomes dry and lusterless and fine scales may be shed from it. Trichiasis and entropion may develop, and the lids may become totally adherent to the eyeball.

The prognosis is most unfavorable, treatment seeming to be of little avail when the eye mouth and throat are involved.

Anemia, which is often given, seems to exert a beneficial influence if not on the eye condition at least on the general health. Mercury and iodides have been prescribed in error the condition being mistaken for syphilis. They have most harmful effect and should never be used. Soothing lotions and oily applications may be employed for the eyes, and, if necessary, operations may be performed for the trichiasis and entropion. Nothing, however, has a permanent effect. C. CORRY YACKEY M.D.

Stock, H. H. The Etiology of Sympathetic Ophthalmia. *Am J Ophth* 9, 3, 40

The theories as to the etiology of this disease fall into groups corresponding to the different periods of development in medical science. The most recent is 'Elekking's' theory of anaphylaxis which has been recently confirmed by Wood's experiments though other investigators express doubt of the possibility of the development of an auto anaphylaxis. Kodama holds that any tissue of the eye may produce more than one antigen some of them common to

all the eye tissues, and others specific to a special tissue.

According to the most rational theory the antigen is developed through endogenous infection of the uveal tract by micro organisms which may remain in the host for many years. The organisms known to cause clinical symptoms similar to those of sympathetic ophthalmia are the tubercle bacillus and the spirochete pallida both of which at times exhibit decided affinity for all the tissues of the eye. The complement-fixation test eliminates syphilis as the primary factor.

Four arguments indicating that the tubercle bacillus is the factor are presented.

About two thirds of the cases of ophthalmia develop in early life, when slight or no immunity has been developed. This is in agreement with MacKeane's observation that cases are most common in scrofulous children. Although as a rule the condition occurs within a few weeks after injury, in some cases it does not develop until years later, a fact indicating that the infecting organisms may be present at the time of the injury but remain dormant. This is true of the tubercle bacillus. If immunity becomes lowered, the bacilli may be distributed by the circulation and attack weakened or diseased tissue.

The clinical picture common to ocular tuberculosis and sympathetic ophthalmia is that of choroiditis, papillitis, plastic iridocyclitis, and nodules in the iris.

3. The ordinary pathologist is frequently unable to differentiate between the two conditions.

4. Gifford's method of using sabinates corresponds to the treatment of scleritis, which is believed to be due usually to tuberculosis.

The author has attempted to produce an antigen by culturing tubercle bacilli in a medium containing the uveal tract and also in the living eye. The result of these experiments will be reported later.

C. CORRY YACKEY M.D.

Knapp, A. Metastatic Thyroid Tumor in the Orbit. *Arch Ophth* 9, 3, 14, 68

Conheim was the first to recognize the fact that a struma may cause metastases. Such a tumor he called a metastatic benign struma. The metastases occur in the bones and in the lungs.

A case reported by Knapp was that of a man 66 years of age who presented himself for examination complaining of discomfort in reading and a soft mass in the upper margin of the right orbit occupying a round defect in the bone where pulsation could be felt. At operation the mass was found to be a tumor in the medulla of the bone in lying particularly the anterior part of the frontal bone. The cavity was filled with soft, dark red material which was

different to the peritoneum below and bled profusely. The bowal walls of the cavity were smooth.

The pathologist report was adenoma of benign thyroid tissue reproducing thyroid structure to the smallest detail many thyroid containing soft achlophile colloid surrounded by flat thyroid cells.

Symptoms of other metastases appeared one and one half years later in the orbit, scapula, ribs, lungs, and pelvis and a distinct tumor extending behind the sternum was discovered in the thyroid gland.

The metastases of adenocarcinoma of the thyroid may show normal thyroid adenomatous tissue. They grow slowly. The primary tumor in the thyroid is small and escapes detection often not being found until the character of the metastases is recognized.

W. E. M. D.

Smith, D. Factors Influencing the Choice of Method for Cataract Extraction. *Arch Ophth* 93, 11, 3.

No single method of cataract extraction is entirely satisfactory as routine for all cases.

The methods considered typical extraction after capsulotomy and extraction in the capsule either by pressure only as practiced by Smith, or by traction. The traction methods comprise traction with the forceps, as recommended by Verboed and Iversen, traction by means of a screw, as Barraquer's method, and combined traction and pressure as advocated by Knapp and Tuerk.

The factors which influence the choice of method are considered in three groups, the first including the age of the patient, the type and the stage of maturity of the cataract, and the presence of complication; the second, the probable behavior of the patient; the prominence or recession of the eyeball and the size of the cornea; and the third, the conditions affecting the operator such as his skill, his training, the frequency with which he operates, and the quality of his assistance.

Smith distinguishes three types of cataract in children, the membranous, which he extracts with forceps, the milky which he needles and the jelly like flocculent cataract which he removes by linear cut action.

In cases of senile cataract the younger the patient the smaller the nucleus and the stronger the attachment of the lens, both senile and by slow. Therefore the Smith method is probably the most difficult and capsulotomy should be done on all patients under 40 years of age and most of those under 55.

Six types of lenses are distinguished in senile cataract, the immature or olean, mature small, immature thin hypermature, and sclerotic.

To predict the size shape and consistency of the lens and the strength of the capsule correctly requires much experience.

Highly myopic eyes are perhaps best treated by the gentlest capsulotomy operation in which the smallest section is made that will allow the escape of the nucleus.

In eyes with tendency to glaucoma intracapsular extraction seems to be safer probably because of their freedom from soft lens matter blocking of the pupil, and capsular tags in the wound.

Bulging eyes and tightly fitting lids are not suited to any type of intra-ocular operation. For the eyes of poorly nourished persons which are sunken and deep set and have flaccid lids the intracapsular extraction is ideal. The predominance of this type of eye in India is an important factor in the success of intracapsular extraction in that country.

Cases of small cornea are suitable for intracapsular extraction unless the entire section is made well in the sclera. Small cornea do not imply small lenses nor shallow anterior chambers and in these cases the sclera may always be safely transfixed.

Intracapsular extraction by traction requires strong cornea such as is to be expected only in the very late mature and hypermature cases and membranous and after cataract.

Dislocated lenses and cases complicated by glaucoma or visual disease vitreous extraction in the capsule. Intracapsular methods should be chosen only for cases in which they are definitely indicated.

S. S. How, M. D.

Eller, R. J. L. The Sign and Signs of Glaucoma. *Am J Ophth* 9, 3, 1.

The typical symptoms of glaucoma are closely associated symptoms, rising from the distention of light. The signs belonging to glaucoma arise in the cornea and must be distinguished from those due to the crystalline lens or produced by its bubbles or cells on the corneal surface.

Eller reports careful study of the differences observable between these kinds of signs, all of which are considered distention phenomena.

As this excellent discussion suffers by condensation, those interested should refer to the original article.

C. COHEN, M. D.

## EAR

Kerrison, F. D. The Improved Artificial Drum as an Aid to Hearing. A Study of Certain Principles involved. *Laryngol* 47, 9, 333.

The first demonstration of a functional change in hearing in cases of chronic catarrhal otitis media and kindred lesions with an intact drum membrane is every slight loss of acuteness in the hearing of the conversational voice and diminished hearing distance for the telephonic or audiometer. Frequently the patient can hear the ordinary watch only a few inches from the ear or only on contact, while he hears musical tones down to twenty six double vibrations or even lower.

When there is considerable destruction of the drum membrane or of the partial destruction of the malleus the first functional change is decrease in the hearing range to the lower end of the musical scale.

Perforations in Shrapnel's membrane do not have any influence on hearing.

In cases of extensive perforations of the drum membrane a bit of sterile cotton flattened and cut into a disc-like shape and applied against the perforation or against the tympanic structures present against the fundus of the canal. It often increases hearing. Quite as often, however, it is absolutely without influence. It is thought that when the cotton disc is beneficial it finds itsorable contact with the ossicular chain, re-establishing the conduction of sound as along the normal pathway.

The change in balance is perhaps the chief factor in the pronounced deafness in certain cases in which the drum membrane has been destroyed and in varying degrees is a contributory factor in all such cases. It is obvious that whatever reduces the difference between the respective degrees of mobility of the ossicular chain and the round window membrane under the direct impact of sound waves must necessarily interfere with the movements of the cochlear fluids and therefore reduce the hearing power.

The author reports a case of chronic suppurative otitis of both ears in which a cotton disc was applied to the remaining portion of the ossicular chain in the right ear without any improvement in hearing. A thin slip of paper saturated with alcohol was then placed against the postero-superior canal wall and by means of cotton applicator slid inward and downward into contact with the inner tympanic wall so that it passed over and approximately covered the region of the round window. The pa-

tient immediately remarked on the improvement in hearing.

Kernson has tried the paper slip method but found that in a number of cases it failed. Cases of deafness due to firm ankylosis of the tapes within the oval window are among those logically giving negative results. In some cases the use of both cotton disc and paper slip gave good results.

JAMES C. BRASWELL, M.D.

LILLIE, H. I. A Septic Type of Temperature Not Referable to the Ear in Cases of Acute Suppurative Otitis Media. *A. Otol. Rhinol. & Laryngol.* 9: 333, 1900.

If patient with acute suppurative otitis media has septic type of temperature, the natural tendency of the otolaryngologist is to ascribe the fever to extension of the infection from the ear and mastoid to the sigmoid and lateral sinuses. It has been well established in such cases that in taking time to make differential diagnosis the physician does not endanger the patient. Such a course may reveal involvement of other structures which will account for the clinical picture.

It is believed that in five cases reported in this article four different disease conditions acted as causal factors of the septic type of temperature, namely pyelitis, central pneumonia, an abdominal postoperative condition and a gastro-intestinal disturbance. Treatment directed to these conditions appeared to clear up the symptoms, while operation in at least one would doubtless have resulted fatally.



# SURGERY OF THE NOSE THROAT AND MOUTH

## NOSE

Blackwell, H. B. Some Clinical Observations on the Correction of External Deformities of the Nose by the Intranasal Route. *Laryngoscope*, 9 3, XXXII.

Concave deformities approaching and including the saddle-back nose, whether caused by syphilis or trauma, are corrected by the use of rib and cartilage grafts about a 10 in. length, taken from the anterior end of the eighth rib. The graft is split from side to side and from end to end and inserted through an intranasal incision at the mucocutaneous margin of the vestibule, lateral to the septum. The smooth curved surface of the rib is placed uppermost and the upper end of the graft placed in contact with the lower end of the frontal bone. For lesser deformities of this type a cartilaginous graft from a nasal spur or from the septum is used.

In cases of convex deformity the beak-like nose, an intranasal incision is made in the soft parts below the deformity, to one side of the junction of the septum with the lateral wall of the nose. The osseous cavity is removed subperiosteally with forceps.

For the correction of lateral displacements which are frequently associated with deflection of the nasal septum, a submucous resection is done and the nasal bones are refractured at their attachment to the frontal bone.

In cases of long nose or nose with low tip and cases in which the septal cartilage is lowered with corresponding elevation of the lateral alar cartilage the soft tissues of the nasal partition below the cartilaginous septum are separated from its inferior edge by a through and through incision from the mental process of the superior maxilla to the tip of the nose. A second incision is made low down over the bridge and the lateral aspects of the nose and the soft parts are freely elevated. To elevate the tip, a triangular piece of cartilage with its perichondrium is removed from the lower edge of the septum, and the soft septal tissues are united by through and through sutures.

General anesthesia is usually employed. After the operationaseline is applied to the skin over the nose and face. In cases of convex deformity and lateral displacement, a wet pad of boracic acid gauze is placed over the nose for twenty-four to forty-eight hours. W. B. STARR, M.D.

Stein, O. J. The Intranasal Injection of Alcohol in the Treatment of Hyperaesthetic Rhinitis and Some of the Nasal Nerve. *J. Otol. Rhinol. & Laryngol.* 9 2, XXXI, 20.

The vasomotor disturbances of the nose may be treated by direct attack upon the nerves or by an

attempt at desensitization. The results obtained by the latter however have not been found very satisfactory.

In every instance a searching survey of the nasal chambers should precede any radical method of treatment. Local pathology in the nose should be dealt with properly.

It is well recognized fact that the great fifth nerve and its intimate connections with the sympathetic and motor nerve systems plays an important rôle in a variety of disturbances arising from its stimulation or irritation, whether this takes place from within or without. Just why irritation of these nerves should be followed in one instance by pain, in another by reflex asthma, in another by rhinorrhea, and in another by the so-called hay fever syndrome is a physiological anatomical study which opens up an immense field for speculation and investigation.

The distribution of the intranasal nerve supply may be divided into two divisions. The anterior division is the nasal or ethmoidal nerve. The posterior division is the branches of the sphenopalatine ganglion. After the production of local anesthesia with cocaine the anterior division is injected at its foramen or where it enters the nose. A specially designed needle and syringe are used for this purpose.

In injecting the posterior division the region of the sphenopalatine foramen is the point of election. A special needle is used also for this purpose. The injection should be preceded by the application of cocaine to the region of the ganglion.

Alcohol is the most suitable substance for injection because it is sterile, non-toxic and non-corrosive. A 75 per cent solution of absolute alcohol with sterile water is used. About 10 minims are employed for each injection.

The functional activity of the nerve is restored to normal within a variable period. Seasonal cases may require re-injection each season. The more exact the injections the more effective and lasting the results. FAYNE K. HAMEN, M.D.

Grove, W. E. Malarial in the Fracture and Irrigation of the Maxillary Bone. *J. Otol. Rhinol. & Laryngol.* 9 2, XXXI, 9 3.

In 76 a French dentist, Jourdain by sense of touch alone and without the use of artificial illuminations, irrigated the maxillary sinus through the ostium maxillare. In 883, Hartman reported three cases cured by irrigation through the natural opening into the antrum, and in 889 he treated thirty-two cases by irrigation through the natural opening or by passing a drill canal through the posterior fontanelle.

Puncture through the inferior meatus for aspiration was first described by Moritz Schmidt in 1833. Lichtitz, in 1890 syringed through the inferior meatus, and Capdepon, in 1894 practiced air inflation by this method.

Gurhis discovered that the veins of the antral mucosa are very numerous, and that frequently there is a thick venous plexus, sometimes on the orbital wall, sometimes on the nasal wall.

Grove has collected the reports of fifteen cases in which death followed antrum puncture, air inflation, and irrigation of the antrum. In eleven cases it occurred in a few minutes and in four at the end of a period varying from a few hours to thirty-six hours. According to the case reports in which sufficient detail was given the ante-mortem symptoms were very much the same in every instance. There was sudden collapse with unconsciousness, cyanosis, pulse and respiration changes, tonic and clonic contraction of the various groups of muscles or of all the muscles, and sometimes epileptiform attacks. We must therefore assume from the more or less common symptomatology preceding death in all cases that we are dealing with a causative factor which is common to all of them. The puncture was done seven times from the inferior meatus and three times from the middle meatus; the route in five cases was not mentioned.

Autopsies were performed in seven cases. Three were negative. In two cases there were hemorrhages or signs of stasis were discovered in various organs and in two cases air was found in the circulation. Bowen's case showed a detached thickened mucosa of the sinus with needle wound.

Another series of twenty-nine cases collected from the literature included twenty-five cases of puncture and irrigation of the maxillary sinus and four cases of inflation of the sinuses with air. In the twenty-five cases the puncture was done fifteen times through the inferior meatus and twice through the middle meatus; in the remaining eight case reports the route of the puncture was not given. In this group collapse occurred and there were serious general symptoms, including suspended or altered breathing, pulse changes, tonic and clonic contraction of the muscles, hemiplegia, et cetera—the same general symptoms as those in Group A—b but no fatalities.

In a third group of cases, six in number, the common symptom was transitory blindness.

These three groups were similar in many respects. The complications are apparently not dependent on section or faulty technique.

A fourth group was made up of cases in which the complications were caused by forcing air irrigating fluid or products of infection into the tissues adjacent to the antrum during the act of puncture or irrigation. There were no fatalities.

The author reports the case of a young adult who had an acute maxillary sinus infection with redness of the left eye and pain below it. Treatment consisted of irrigation of the middle turbinate followed

by shrinkage and suction for one week and then irrigation of the antrum. Seventeen days after the beginning of treatment, 1 c.c. of a 5 per cent protargol solution was introduced into the sinus after irrigation. When the attempt was made to introduce a second 1 c.c. the injection caused extrusion of the bulb marked subcutaneous swelling of the upper and lower lid, and great pain in and around the eye. Crepitations could be felt in both the upper and the lower lid near the inner canthus.

Treatment by the application of heat, 100° C. cathartics, and sweating was given. After twenty-four hours ice was used instead of heat. Optic atrophy developed and the sight of the eye was lost.

The author believes that the causative factor was the same in all of these cases. As the complications did not occur at the time of the puncture itself but developed later during the period of air inflation or syringing the puncture itself as a cause can be eliminated.

It is improbable that cocaine or novocaine poisoning was responsible for the complications as many of the patients had had previous cocaine or novocaine anesthesia without untoward results.

Two other possible causes are (1) a nasal reflex through the trigeminal and trigeminal nerves, (2) air embolism.

Air embolism is thought to be the cause of the complications in the cases of Group A and in most of those of Group B. The air enters the circulation during the inflation of the antrum through the puncture of the sinus in the antral mucosa proceeding by the facial and jugular vein to the right heart.

The complications in the case reported by the author are attributed to the underlying infection of the sinus rather than to the accident which occurred at the time of the irrigation.

The following conclusions are drawn:

Puncture and irrigation of the maxillary sinus are useful diagnostic and therapeutic measures.

It makes little difference whether the irrigation is done through the inferior or the middle meatus. The use of the middle meatus is probably the easiest for the patient.

3. The procedure as formerly employed is not entirely free from danger.

4. While the effect of the anesthetic used and vagus irritation cannot be entirely eliminated, the chief danger lies in the irrigation rather than the act of puncture or the irrigation.

5. The procedure can be made comparatively safe if the use of air before and after irrigating is avoided.

W. B. STARR, M.D.

Blackwell, K. S. Carcinoma of the Antrum of the Highmore. *Surg. Clin. N. Am.* 9, 2, 445.

The author reports a case of carcinoma of the antrum treated radically as follows.

After multiple ligation of the left carotid and the removal of several lymph nodes for examination an incision was made over the left superior maxilla,

beginning on the left side of the nose and following the nose around to the midline of the upper lip. The lip was cut through and the flap dissected back. The bony wall of the superior maxilla appeared normal. For exploration, the antrum was opened with a chisel and the opening enlarged. The bone at this point which as the a tenor wall of the antrum, seemed normal. When the opening was enlarged a mass of tumor tissue in the back part of the antrum was exposed. The wound was thoroughly cauterized, and an incision was made below the lower left eyelid from the upper end of the incision along the border of the nose outward for a distance of about  $\frac{1}{4}$  in.

Another incision was made in the mucoperiosteal covering of the hard palate a little to the left of the midline. The bone of the alveolar process and the bone of the hard palate were cut through with bone forceps and the attachment of the lower part of the superior maxilla to the upper portion beneath the orbit severed with bone forceps. The lower portion of the superior maxilla was then removed, the orbital plate being left intact. The tumor occupied the upper and posterior part of the antrum, and seemed to have gone through the bone at one point posteriorly and to the outer side. This extension, however, was not great. The posterior palate bone and all of the soft structures of the palate remained intact. Following the removal of the tumor with the periosteal elevator the bone and soft tissues were thoroughly cauterized with the Percy cautery. The entire raw surface of the wound was then gone over thoroughly with a sharp electric cautery and every raw surface was well cauterized to prevent implantation. The septum between the antrum of Hightmore and the nasal cavity was completely removed. The cavity was packed with iodoform gauze, and the wound closed with interrupted sutures of fine silk-worm-gut. The packing was brought out through the mouth.

The patient made a satisfactory recovery and was discharged November 9, 1909. During the first ten days in the hospital a good deal of slough separated from the burned area.

On March 9, 1910 the patient returned for examination. At the roof of the wound which corresponded to the back part of the bony portion of the orbit and the tissue immediately beneath it, as an area about  $\frac{1}{4}$  in. in diameter which presented a granular appearance. The rest of the wound was smooth and firmly healed, and showed no signs of malignancy. A frozen section was made of tissue taken

from this region with a curette, the wound being immediately thereafter disinfected with pure carbolic acid. The section showed cancer of the squamous-cell type. Three needles of radium, each containing .5 mgm. were inserted into this portion and left in for twelve hours. The patient returned at intervals, and the area of cancer seemed to become smaller.

On June 10, 1910 a small area in this region still presented somewhat the appearance of cancer. A frozen section showed cancer of the same general type as that found at the operation. Sixty milligrams of radium screened in a copper tube were fastened at this point by linen suture, and gauze was packed so as to hold it in position. The radium was removed after twenty-four hours. A week later there was considerable reaction not only in the cancerous area but also in the surrounding healthy tissues. This gradually disappeared leaving a small surface of necrotic tissue corresponding to the area of the cancerous growth and extending about distance around it.

When the patient was last seen on August 5, 1910 there was no evidence of recurrence.

O. V. Rott, M.D.

#### MOUTH

Fischer, M. H. Some Physiological Principles in Orthodontia. *International Journal of Orthodontic Oral Surg. & Radiography* 1913, 11, 6.

Orthodontic procedures should be initiated early as bone absorption and bone deposition occur more quickly and effectively in young structures.

Slow correction is better than quick correction as it is associated with less danger of tooth strangulation and allows bone absorption followed by bone deposition without the hazard of bone necrosis such as invariably follows excessive and too rapidly applied pressure.

Correctures which apply counter-pressure to the jaws are always preferable to those which apply counter-pressure to the individual teeth as the jaws can withstand greater pressure than the teeth movable in its socket. When pressure is applied to the teeth it should be applied to as many of them as possible.

The poor condition of many teeth in infancy is due to abuse. Nourishing food is essential to develop the teeth and bring them into use.

JAMES C. BRADWELL, M.D.

# BIBLIOGRAPHY of CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

NOTE.—The bold face figures in brackets at the right of reference indicate the page of this issue on which abstract of the article referred to may be found.

### Operative Surgery and Technique

- Plastic surgery L W JOHNSON U S N A 21 M  
Bull 9 3, xviii, 4  
Cavity dissections for metastatic cancer A C SCOTT  
Surg Clin N Am 922 n, 489  
No hand touch technique A R GRANT Surg Gynec  
& Obst 922, xxvii, 66 [285]  
The technique of knot W J SULLIVAN J Am M  
Ass 923, lxxix, 80  
Instruments left in the peritoneal cavity C WILKINSON  
Med Press, 9 3, x, 7  
The post hospital care of surgical patients H H  
TROUT South M J 9 3, xvi, 36  
That beautiful cathartic after abdominal operations  
C A HOWARD Canadian M Ass J 9 3, xii, 30 [289]

### Aseptic and Antiseptic Surgery

- Antiseptics in compound operations W E DRYDEN  
Practitioner 9 3, cx, 3  
The value of chloroform as an antiseptic M GRUBER  
Wald and B PAARE Klin Wochenschr 9 3, 75  
Iodine and xerothensy based on new iodine prepara-  
tion H J ROYCE N Y M J & Med Rec 9 3, cxviii, 60  
Asepsia in compound fracture W I MIDWINTER U S  
Naval M Bull 10 3, xxvi, 89

### Anesthesia

- Choosing anesthesia for general surgery J M H. 23  
Minnesota Med 9 3, vi, 35  
Anesthetics in common operations D W BURNETT  
Practitioner 9 3, cx,  
Studies in experimental traumatic shock the effect of  
ether on the circulation in traumatic shock M CAPPELL  
Arch Surg 9 3, vi, 41 [289]  
Conduction anesthesia in the region of the lower jaw  
F Mosebrink Deutsche Vrtzsch J Zahnchir 9  
of  
A technique of spinal anesthesia for laparotomy S A  
LAW Lancet 9 3, cxv, 29  
The induction and maintenance of lumbar anesthesia  
O HANSEN Deutsche Zschir f Chir 9 3, cxvii, 330  
Remarks on the value of buty as local anesthetic  
W M BRADSHAW Brit M J 9 3, 4, 57  
Protein coloring of toxic allaloids, particularly  
cocaine, to prevent their abuse W KOSCHKE Zentralbl  
f Chir 9 3, xix, 77

### Surgical Instrument and Apparatus

- A sterile syringe receptacle H RUS Zentralbl f  
Chir 9 3, xiv, 83  
A thoracic abdominal gas J J REICHENWALD N  
York M J & Med Rec 9 3, cxviii

## SURGERY OF THE HEAD AND NECK

### Head

- Head injuries of ear B T LOTT Med J Australia  
9 3, 4, 5  
Fractures of the skull E SACCHI Surg Clin N Am  
922, 37  
Chondroplasty with cartilage W T COUGHLIN Surg  
Clin N Am 922, 67  
Transplantation of costal cartilages for depressed frac-  
ture of the frontal bone C A McWILLIAMS Ann Surg  
10 3, lxxviii, 5  
Epilepsia and sebaceous cyst of the scalp side by side  
H A ROYCE Surg Clin N Am 9 3, 293  
Generalized tonic spasms, hemiparesis and coma, the  
result of a lateral access thrombosis S SALINGER Laryn  
go-scope, 9 3, xxxiii, 27  
A new frontal sinus instrument J A HAGBERG  
N York M J & Med Rec 10 3, cxvii, 4  
Extradural abscess complicating frontal sinusitis—  
report of case R H SCHULTZ Ann Otol Rhinol &  
Laryngol 9 3, xxxi, 607  
Septic meningitis secondary to otitis media O H P  
PERRY Med Clin N Am 9 3, vi, 93

- Herpetic meningo encephalitis in rabbits C DA FANO  
J Path & Bacteriol 923, xxv, 85 [290]  
A brain abscess of rather long duration C J ADAMS  
Ann Otol Rhinol & Laryngol 9 3, xxxi, 934  
Otic abscess of the cerebellum report of case C F  
VANDER J Am M Ass 9 3, lxxx, 224  
Tuberculosis of the brain in syphilitic individual  
terminating in acute meningitis J L LEACH Bull  
Buffalo Gen Hosp Buffalo 923, 4  
The picture of hypophyseal carcinoma W KROLL Wien  
Arch f inn Med 9 3, 553 [291]  
Parotitis from an unusual cause H W LEWIS South  
J M & S 923, lxxxv, 33  
Cyst of the parotid gland enucleus H C ROYSTER  
Surg Clin N Am 922, 177  
Plastic operations on the nose and forehead H S  
MILKA Surg Clin N Am 9 3, 507  
A case in which the cheeks are raised by modification  
of the Joseph operation V F CHAPMAN Wien med  
Wochenschr 9 3, lxxx, 336  
Atypical plastic operations for congenital fissures of the  
lip and palate J E THOMPSON Surg Clin N Am 923,  
n, 357 [291]

Rhinoplasty and cheek, chin, and lip plastic with tubed  
(temporal) pedicled forehead flaps C. A. McWILLIAMS and  
H. S. DODDSON *Surg. Gynec. & Obst.* 1923, xxxvi.

Carcinoma of the cheeks and lips: general principles  
undivided in operation, and summary of results obtained  
at the Presbyterian, Memorial, and Roosevelt Hospitals,  
New York G. E. BREWER *Surg. Gynec. & Obst.* 922,  
xxxvi, 69.

The diagnosis of osteomyelitis of the upper jaw C.  
LIVU *Chyrol. sold.* 9, 12, 239.

A typical mandibular fracture E. L. WALTER *U. S.*  
*Naval M. Bull.* 9, 3, xviii, 86.

Ununited fracture of the mandible W. T. COLGHELY  
*Surg. Clin. N. Am.* 92, 11, 1600.

Phosphorus necrosis of the mandible H. P. PIERKILL  
*Brit. J. Surg.* 1923, 2, 280.

Osteoma of the hard palate J. S. HORSLEY *Surg. Clin.*  
*N. Am.* 922, 2, 242.

Loose perforation of the hard palate with surgical  
closure F. E. LOFT *U. S. Naval M. Bull.* 9, 2, xviii, 86.

Textbook and atlas of surgery of the teeth and mouth  
Ed. P. FRIEDBERG MACOS. Munich, Lehmann, 9.

Mixed sarcoma of the posterior pillar of the fauces  
N. PATTERSON *Proc. Roy. Soc. Med. Lond.* 9, 3, xvi,  
Sect. Laryngol. 3.

The radium treatment of carcinoma of the mouth  
L. R. TAYLOR *Med. Clin. N. Am.* 9, 2, vi, 243. [294]

Carcinoma of the tongue treated by embedding glass  
sponges containing radium emanation F. E. SACKOV  
*Chicago M. Rec.* 923, xiv, 479. [294]

## Neck

Deformity of the neck treated by transplantation of fat  
S. McCURDY *Surg. Clin. N. Am.* 922, 2, 39.

Abscesses descending from the upper air passages  
O. GLOAGU *N. York M. J. & Med. Rec.* 923, cxvii, 29.  
[294]

Tuberculous glands of the neck and spinal accessory  
paralysis F. H. LARLEY *Surg. Clin. N. Am.* 922, 2, 208.  
[295]

Abscesses of the larynx and trachea following influenza  
C. F. THORNTON *Ann. Otol. Rhinol. & Laryngol.* 19,  
xxxii, 118.

A case of tuberculosis of the larynx J. DODDAS GRAVE  
*Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Laryngol.

The treatment of dysphagia in laryngeal tuberculosis  
by resection of the superior laryngeal nerve KERNIGAN  
Verhandl. d. Kong. Russ. Chir. Petrograd, 1923.

Benign neoplasms of the larynx J. A. CA. ANAGUE  
*Illness M. J.* 923, xii, 50.

Lipoma of the larynx removed by operation A. J. M.  
WRIGHT *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect.  
Laryngol.

Cancer of the larynx C. JACKSON *Ann. Surg.* 1923,  
lxxvii, 129. [296]

A case showing unusually early metastasis to carcinoma  
of the vocal cords A. E. HERTZLER *Ann. Otol. Rhinol. &*  
*Laryngol.* 1923, xxxii, 12.

Fatal foreign body in the larynx F. von HOF-  
MEISTER *Munchen. med. Wochenschr.* 1923, lix, 1667.

Hemilaryngectomy for carcinoma F. MUNKER *Lancet,*  
9, 3, cxv, 78.

A case of laryngectomy following thyrotoxicosis C. A. S.  
RINDOUT *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect.  
Laryngol. 8.

The technique of thyrotoxicosis A. E. HERTZLER *Ann.*  
*Otol. Rhinol. & Laryngol.* 1923, xxxii, 123. [295]

The value of basal metabolic studies in the differential  
diagnosis of conditions resembling hyperthyroidism

presentation of four cases illustrating its value H. K.  
MONTANA *Med. Clin. N. Am.* 923, vi, 240.

Preservation of the life of completely parathyroidectomized  
dogs by means of the oral administration of calcium lactate A. B. LUCKENBACH and B. GOLDSTEIN  
*J. Am. M. Ass.* 923, lxxx, 79.

Chemical features of thyroid disease W. A. PLUMMER  
*Ann. Clin. Med.* 1923, i, 59.

The larynx in diseases of the thyroid G. B. NEW  
*Ann. Clin. Med.* 923, i, 203.

The heart in thyroid disease F. A. WILLIAMS *Ann.*  
*Clin. Med.* 923, i, 209.

Thyroiditis C. A. HALLING *Ann. Clin. Med.* 923,  
i, 20.

Acidosis in hyperthyroidism R. H. MAJOR *J. Am. M.*  
*Ass.* 923, lxxx, 83.

Incidence of goiter in college students (women) R. P.  
GOLDMAN *Ann. Clin. Med.* 923, i, 212.

Five poster patients W. BAILETT *Surg. Clin. N.*  
*Am.* 1923, 2, 315.

The significance of nodules in the thyroid gland H.  
HOFER *Deutsche Ztschr. f. Chir.* 9, 2, cxviii, 85.

Adenoma of the thyroid J. H. SHERRARD *Californ.*  
*Stat. J. M.* 9, 3, xxi, 16.

Multiple adenoma of the thyroid, toxic, subarterial  
I. ASHALL *Surg. Clin. N. Am.* 92, 2, 35.

Exophthalmic goiter W. D. HILGARD *Surg. Clin. N.*  
*Am.* 1923, 2, 69.

Exophthalmic goiter S. McCURDY *Surg. Clin. N. Am.*  
923, 2, 209.

The appearance in exophthalmic goiter I. BRAUN *Ann.*  
*Med.* 923, xxxii, 43.

The roentgen treatment of Basedow's disease L.  
EHRICH *Sechste. Latharidkongress.* 9, 2, xii, 303.

Histologic study of the effect of ligation of the thyroid  
vessels in exophthalmic goiter A. S. GORDON and H. D.  
CAYTON *Surg. Gynec. & Obst.* 923, cxvii, 75. [296]

Chemical treatment of thyroid gland diseases M. GORD  
*Allg. med. Zentr.-Ztg.* 9, 2, xxi, 9, 3.

The chemistry and the pharmacological action of thy-  
roid E. C. KIRKALL *Ann. Clin. Med.* 1923, i, 216.

The X-ray treatment of thyrotoxicosis J. S. TAYLOR  
*Illness M. J.* 9, 3, xii, 64.

Goetz's test and metabolism in diseases of the thyroid  
TAKEMATSU *J. de metab. et électrol.* 923, vi, 30.  
[297]

Surgery of the thyroid gland P. A. WHITE *J. Iowa.*  
*State M. Soc.* 923, xii, 127. [297]

The blood supply of the thyroid gland and its surgical  
significance E. V. MASTIN *Surg. Gynec. & Obst.* 923,  
cxvii, 60. [298]

The Mayo and Crile clinics with special reference to  
thyroid surgery W. H. BOWEN *Brit. J. Surg.* 923, 2,  
339.

Tetany after hemithyroidectomy F. SACK *Med. Klin.*  
923, xviii, 145. [298]

The end result of surgery of the thyroid J. D. FOX  
KIRKOUT *Ann. Clin. Med.* 9, 3, i, 206.

Further observations on the function of the parathyroid  
glands A. W. BELL and R. S. McCRAIG *J. Lancet,*  
923, xii, 33.

Thyroglossal cyst—case report C. N. GELBERG *Ann.*  
*Med.* 9, 3, xxv, 34.

## SURGERY OF THE CHEST

## Chest W II and Breast

- Bilateral chronic open pneumothorax cured by negative tension report of case E M ENGLISH Arch Surg 93 93 vi, 66 [199]
- Unusual cases of emphysema W WHITTEMORE Surg Clin N Am 93 93 vi, 995 [199]
- The question of chronic emphysema and its treatment F V HINNEY Rhode Island M J 93 vi, 6 [199]
- Recent progress in the treatment of chronic emphysema C A HEDGECOCK J Iowa Stat M Soc 93 xii, [199]
- The early treatment of emphysema by aspiration T MCCRAE Med Clin N Am 93 vi, 844 [199]
- Anomalies of the nipples KARL CASOP Vrk Zest 93, lii, 1039 [199]
- Chronic cystic mastitis M LAMER Nebraska Stat M J 93, vii, 24 [199]
- The diagnosis of indefinite masses in the breast D C L FITZWILLIAMS Brit M J 93 4, 94 [199]
- Tumors of the breast W JENKINS J Iowa Stat M Soc 93, xii, 4 [199]
- A case of endothelioma of the male breast following an injury H K GARFINK Lancet 93 cci [199]
- Carcinoma of the breast I ANGELL Surg Clin N Am 93, ii, 3 [199]
- Remarkable freedom from local recurrence following chemical removal of advanced cancerous breast C W BRIDGES N York State J M 93 xiii, 27 [199]
- Results and technique in the treatment of carcinoma of the breast by radiation B J LEE Am J Roentgenol 93, 2, 6 [199]
- Recurrences in breast cancer A SCHWARTZ and P FLETCHER Bull et mem Soc de chir de Par 93 xlvii, 1994 [199]

## Trachea and Lungs

- A case of papilloma of the trachea J DONNAN GRANT Proc Roy Soc Med Lond 93 xvi, Sect Laryngol 7 [199]
- Hernia of the lung and adenoma of the thyroid E A GRAMAM Surg Clin N Am 93 vi, 1495 [199]
- The operation for traumatic hernia of the lung A LIEBERMANN Zentralbl f Chir 93 xlii, 1408 [199]
- A case of hydatid of the lung W A R SERRA Med J Australia 93, ii, 671 [199]
- Pneumothorax or broncholith H FOX J Am M Ass 93, liii, 75 [199]
- Bronchopulmonary lithiasis J C LYTER Med Clin N Am 93, vi, 97 [199]
- The etiology of postoperative pulmonary complications E C CURTIS Surg Clin N Am 93, ii, 935 [199]
- Lung abscess G J HEUER and P M MACCORMACK Arch Surg 93, vi, 137 [199]
- Lung abscess A L LOCKWOOD Arch Surg 93 vi, 134 [199]
- A case of lung abscess due to the Friedländer bacillus E A GRAMAM Surg Clin N Am 93 vi, 904 [199]
- Post-tuberculous pulmonary abscess M E BOYS some California State J M 93, xii, 9 [199]
- Damaged lungs and bronchiectases C RIVERS Brit M J 1993, 1, 141 [199]
- Extensive bronchiectasis in young child D L BARTON Med J Australia 93 1, 99 [199]
- The establishment of temporary or permanent pulmonary lip fistula in the conservative treatment of advanced bronchiectatic lung abscess W MYERS N York M J & Med Rec 93, cxvii, 7 [199]

- The interrelationship and end results of chronic suppurative diseases of the lung W S LASKOW Arch Surg 93 vi, 343 [199]
- The differential diagnosis between tuberculosis and lung abscess L T LEWALD and N W GREEN Arch Surg 93 vi, 303 [199]
- X-ray study of tuberculous lungs T FRAXER and J D MACRAE N York M J & Med Rec 93 cxvii, 34 [199]
- Radiographic diagnosis of tuberculous pulmonary A N SINGLARI Ann Clin Med 93 1, 490 [199]
- The value of the roentgenogram in the diagnosis and prognosis of pulmonary tuberculosis G G OBERMAYER N York M J & Med Rec 93, cxvii, 9 [199]
- The indications for and the results of, pneumothorax and surgical treatment of pulmonary tuberculosis M WERNERSON Wien med Wochenschr 93 liiii, 973 [199]
- Some principles of immunology applied to treatment by artificial pneumothorax N BARLOW N York M J & Med Rec 93, cxvii, 9 [199]
- Reflections upon nine and one half years' experience with artificial pneumothorax P M RINGER N York M J & Med Rec 93 cxvii, 14 [199]
- Surgical treatment in cases of pulmonary tuberculosis H M D VAN BENT M J 93 4, 38 [199]
- Fibrosis of the lung following ligation of the pulmonary artery combined with phrenotomy and partial occlusion of the pulmonary veins K SCHLAFER Arch Surg 93 vi, 358 [199]
- A case of primary carcinoma of the lung H J C GINSBERG and G M FRYDA J Am M Ass 93 liiii, [199]

## Heart and Vascular System

- The value of pericardotomy in diagnosis and treatment J B ROBERTS Arch Surg 93 vi, [199]
- Resectional mitral valve injections D W CATT Surg Gynec & Obst 93 xiv, 77 [199]
- Pravus injections into the left ventricle W CARMACK Polska gaz lek 93 708 [199]
- Primary tumors of the heart A GONZALEZ Zentralbl f Herzkrankh 93, xiv, 99 [199]
- A method of ligaturing the first stage of the left subclavian artery from behind A K HICKS Brit J Surg 93 4, 307 [199]

## Pharynx and Esophagus

- Hemorrhage from the aorta in case of foreign body in the esophagus W TUNNICLIFFE Polska gaz lek 93 4, 440 [199]
- The thoracic route for the removal of foreign bodies from the esophagus L HEMMERICH Deutsche Ztschr f Chir 93 cxvii, 29 [199]
- Congenital stricture of the esophagus with esophago-tracheal fistula report of three cases E WILSON J Am M Ass 93, liii, 6 [199]
- Surgical treatment of the esophagus H FISCHER Arch Surg 93, vi, 50 [199]
- Second report of esophageal cancer treated with radium C W HARRISON Chicago M Rec 93, xiv, 494 [199]
- A radium needle for the esophagoscope S YANKAUER Arch Surg 93, vi, 588 [199]

## Miscellaneous

- Foreign bodies in the air and food passages H B OXLEY J Med Soc N Jersey 93, xi, 5 [199]

- Profusio hemoptysis E WARR Med Clin N Am 93, 4, 667  
 A dermoid cyst of the anterior mediastinum E MOORE Arch francs belge de chir 92, xiv, 550 [304]  
 Posterior mediastinotomy H LILIENTHAL Arch Surg 92, vi, 274 [307]  
 Surgery of the mediastinum, including the heart and esophagus E W ANGERHALD, L T LEWALD, F J TORREY, and others Arch Surg 92, vi, 289 [307]  
 Diaphragmatic relaxation J BOROW Otolaryngol 92, lvi, 40

- Immobility of the diaphragm, with report of cases of bilateral immobility J H PARON N York M J & Med Rec 92, cxviii, 75 [308]  
 Chest surgery R H DUFFY-TRACER J Med Soc New Jersey 92, vi, 80  
 The present and future in thoracic surgery S ROSEBURY Arch Surg 93, vi, 247  
 Thoracic surgery war lessons in civil practice R P ROWLANDS Lancet, 92, cxv, 16  
 Tetralogy of the right chest cavity report of case W WHEATSTONE Arch Surg 92, vi, 262 [309]

## SURGERY OF THE ABDOMEN

## Abdominal Wall and Peritoneum

- The operative treatment of umbilical hernia N FLEISCHNER Deutsche med Wchnsch 19, 2, xlviii, 712 [310]  
 Epigastric hernia A J BROWN Nebraska Stat M J 92, viii, 10  
 Bilateral indirect hernia with acute appendicitis in the right hemal sac W P BRADSHAW Surg Clin N Am 92, ii, 383  
 A case of primary gelatinous tumor of the peritoneum (possibly pseudomyxoma of colonic type) W L DAVIS Bull Buffalo Gen Hosp Buffalo 92, i, 27  
 Proof of cure in case of tuberculous peritonitis H A ROBERTS Surg Clin N Am 9, ii, 184  
 Peritoneal carcinomatosis complicating scirrhous cancer of the stomach (leatherbottle stomach) T G MILLER Med Clin N Am 92, vi, 9

## Gastro-Intestinal Tract

- New light on gastric peristalsis W C ALVAREZ Am J Roentgenol 93, 2, 31 [311]  
 Gastrostomy for large open safety pot F W BAILEY Surg Clin N Am 29, 2, 14, 1927  
 Cardiospasm J C BRADWELL J Oklahoma Stat M Am 1923, xvi, 5  
 The mechanism of hyperchlorhydria F L ARVILEY Med J Australia, 92, 12, 23 [312]  
 Congenital hypertrophic pyloric stenosis S McGOVERN Surg Clin N Am 92, ii, 263  
 Congenital pyloric stenosis R HILL Surg Clin N Am 92, ii, 1675  
 The employment of 16 duodenal tubes in gastroenterology E P HILLMAN J Am M Am 92, lxxx, 3  
 The distribution of acid cells along the dorsal curvature of the stomach and the possible relation to the occurrence of gastric ulcer H E RAMSACK Surg Gynec & Obst 92, lxxvii, 87 [313]  
 Gastric ulcer I ABELL Surg Clin N Am 92, ii, 3  
 Ulcer of the stomach and duodenum D ROBERTS J Am M Am 92, lxxx, 226  
 The pathological relationship between ulcerative processes in the stomach and duodenum and epigastric hernia H SAMPSON Arch f the Clin 92, cxi, 345 [314]  
 Gastrointestinal ulcer an experimental study A H MONTGOMERY Arch Surg 92, vi, 36  
 Bleed glass contraction of the stomach due to ulcer H S MCKAY Surg Clin N Am 92, ii, 39  
 Pylorotomy for high ulcer of the lesser curvature W BRAUNER Writschbawge Dyelo 192, 11, 245 [315]  
 Perforation of ulcer of the posterior wall of the stomach W CLOOS Beitr Lhe Clin 1922, cxviii, 35

- How should an ulcer of the stomach and duodenum which has perforated into the abdominal cavity be operated on and treated? W ROBERTS Deutsche med Wchnsch 92, xlviii, 800 [316]  
 Forty four cases of simple perforation of gastric and duodenal ulcers with simple method of surgical treatment L R SCHMIDT Acta chirurg Scand 92, lv, 34 [317]

- The fallibility of roentgenological evidence of healed gastric ulcer E HOLLANDER J Am M Am 92, lxxx, 59

- The diagnosis of gastric and duodenal ulcer without the aid of modern laboratory and the roentgen ray O J HARRIS Minnesota Med 1923, 4

- Medical and surgical treatment of gastric ulcer B F LOUWENCO J Lancet, 92, xlix, 3

- The effect of gastro-enterostomy on gastric function as interpreted by the fractional test meal E F GUY Brit J Surg 92, 2, 403  
 Duodenal gastro-enterostomy J C O'DONNAN Surg Gynec & Obst 92, lxxvi, 99

- The cure of certain acute vomitings following gastro-enterostomy R L HARRIS and T G OREN Bull Johns Hopkins Hosp, Baltimore, 92, lxxvii, 86

- A rare complication of posterior gastro-enterostomy by Hirsch's method E A DUBOW Deutsche Ztschr f Chir 29, 2, cxvii, 69

- Resection of the stomach by the Balfour I method in 5 cases of gastric ulcer M FRIEDMAN Zentralbl f Chir 9, 2, xlix, 10

- Deflection of the biliary and pancreatic secretions by jejunostomy as a complement of gastro-enterostomy or gastrectomy L COLL and N P VI Brunselles med 92, iii, 37

- Lymphoblastoma of the stomach report of two cases E C CUTLER and J A SATTIN Surg Clin N Am 9, 2, 1103 [318]

- Cancer of the stomach F V G STARR Canadian M Am J 19, 3, xii, 24 [319]

- Ulcerated carcinoma and carcinomatous ulcer simulating round ulcer E DAVIS Acta med Scand 92, lvi, 34 [320]

- The diagnosis and treatment in case of cancer of the stomach J A SELL MACKENZIE Med Press, 92, cxv, 9

- Carcinoma of the stomach in association with posttraumatic blood Wassermann and the history of chancres T G SCHWARTZ Med Clin N Am 93, vi, 901

- Case of partial gastrectomy for cancer of the stomach R P ROWLANDS Proc Roy Soc Med Lond 92, xvi, Cio Sect

- Carcinoma of the stomach: partial gastrectomy H S MCKAY Surg Clin N Am 92, ii, 33

- Intestinal reaction to erythema dose C L MARTIN and F T ROBERTS Am J Roentgenol 92, 2,

- The anatomy of the lymph vessels of the small intestine  
O C AAGAARD *Zschr f Anat Entwicklungsgeesch* 923 liv, 30
- Postoperative obstruction of the small intestine I J  
WALKER *Surg Clin N Am* 923 ii, 145 [314]
- Notes on the prolapse of patent omphalomesenteric  
duct B BRADY *Nederl maandschr geneesk* 923,  
21, 143
- Acute intestinal obstruction P H BURTON *J Lancet*,  
1923 xlv, 31
- Acute obstruction: resection of gangrenous loop ileoco-  
lotomy F W BAILEY *Surg Clin N Am* 923 ii, 65
- Report of case of obstruction of the intestine due to an  
ascaris W P BARNES *J Am M Ass* 923 lxxx, 8
- Chronic duodenal ileus D P D WILKINSON *Brit M J*  
923 ii, 9
- Chronic duodenal obstruction—etiology, symptoms and  
treatment E P QUAIN *N York M J & Med Rec*,  
923, cxv, 65 [316]
- A substitute for duodenal drainage C E HERRINGTON  
*Ann Otol Rhin Laryng* 923, xix, 33
- Abnormalities of the duodenum J H ARMINSON  
*Brit J Surg* 923 ii, 316
- Congenital anomaly of the duodenum with the formation  
of diverticula H SCHAEFER *Fortschr d Geb d  
Roentgenstrahlen*, 923, xxx, 776
- Case of duodenal ulcer to illustrate certain points in  
diagnosis H S SCOTT *Proc Roy Soc Med Lond*  
923, xvi, Clin Sect, 5
- Duodenal ulcer J S HORSLEY *Surg Clin N Am*  
923, ii, 217
- Recurrent duodenal ulcer L DAVIS *Surg Clin N  
Am*, 923 ii, 947
- Chronic duodenal and gastric ulcer diagnosis D  
MACRAE, JR. *J Lancet*, 1923, xlv, 30 [315]
- The treatment of duodenal ulcer H S WILLSON  
*Minnesota Med* 923, vi, 6
- Repair of duodenal perforation, cholecystostomy for  
gallstones F W BAILEY *Surg Clin N Am* 923  
ix, 145
- Gastrostomy Inoperable cancer of the stomach F W  
BAILEY *Surg Clin N Am* 923, ix, 1649
- The surgical complications of trichoccephalus and oxyuris  
infection ASHLEY *John Wechsler* 923 i, 74
- Tuberculosis of the intestine the ulcerative form as  
phase of pulmonary tuberculosis D A STEWART *Can  
Adm M Ass J* 923 xii, 30
- Cases of perforation of the bowel and rupture of the heart  
D FRANK *Glasgow M J* 923, xvii, 9
- Acute intestinal obstruction caused by fecal impaction  
in Meckel's diverticulum R B HERTZMAN and D M  
BURN *J Am M Ass* 923, lxxx, 30 [315]
- A review of the roentgenological consideration of the  
appendix A J QUINCY *Internat J Surg* 1923, xxvii,  
9, 59
- Appendicitis M G SERRAO *Surg Clin N Am* 923,  
ix, 153
- Appendicitis H L NORTHBROOK *Hahnemann Month*  
1923, lvm, 6
- Appendicitis and appendiceal cecic R D LONG *J  
Oklahoma State M Ass* 923, xvi,
- Trauma and appendicitis C J G T YLON *Brit M J*  
923, i, 7
- The relation between appendicitis, oxyuris vermicularis,  
and local constipation in the appendix all E H EAST-  
WOOD *J Path & Bacteriol* 923, xxvi, 69
- Acute appendicitis A S RUSSELL *J Oklahoma Stat  
M Ass* 923, xvi, 5
- Acute appendicitis in children M E SPOFF *J Okla-  
homa Stat M Ass* 923, xvi,
- Intestinal obstruction following acute appendicitis and  
peritonitis P F McFARLAN *Brit M J* 923, 6 [316]
- End results of 500 cases of chronic appendicitis  
statistical study J B DEVEREAUX and I S RAYNER *Arch  
Surg* 923, vi, 3
- The roentgenological aspect of chronic appendicitis  
H K PANDOLFI *Arch Surg* 923 vi, 85
- A case of cystic appendicitis OUDARD *Bull et mém  
Soc de chir de Par* 923 lxxvii, 99 [316]
- The treatment of appendicitis T KORCZAKOWSKI  
*Polska gaz lek* 923, i, 685
- Treatment of acute suppurative appendicitis T J  
BROTHMAN *Internat J Surg* 923, xxvii, 6
- Hemorrhage following abdominal operations, with  
special reference to appendectomy and exsanguinating bleed-  
ing from the stump C H PRINCE *Surg Gynec & Obst*,  
923, xxvii, 80 [316]
- Inguinal hernia on the right side following appendectomy  
OUDARD and JEA *J de chir* 923, xi, 534 [317]
- Residual appendicular abscesses after the removal of the  
appendix opening in the bladder by the subperitoneal route  
BOYCE *Lyon chirurg* 923, xix, 56 [317]
- End to end intestinal anastomosis an experimental  
study D V THORNTON *Northwest Med* 923 xiii, 27 [317]
- Intestinal obstruction from hydronephrosis in pelvic  
kidney H T M MERRILL *Brit J Surg* 923, ii, 431
- An unusual case of malformation of the colon W  
BOYCE *John Wechsler* 923 i, 14
- A case of epilepsy with emprolism (Hirschsprung's  
disease) and polyoma E B BLOCK *South M J*  
923, xvi, 5
- Hirschsprung's disease brief review of the literature  
with report of six cases M S RICHARD, L M SILVER  
and W C A SERRAO *Arch Pediat* 923 ii, 49
- The first and last link W A LANE *Practitioner* 923  
cx, 33
- Diverticula of the colon J T ROGERS *Minnesota  
Med* 923, vi, 35
- A modification of the John Young Brown operation for  
treatment of chronic ulcerative colitis with report of  
cases E H MARSH and W THALEMEIER *Wisconsin  
M J* 923, xii, 36
- Carcinoma of the colon J PHILLIPS *Ohio Stat M J*  
923, xii, 7
- Cancer of the colon G W CHALK *Ohio State M J*  
923, xii, 5
- Scirrhus carcinoma of the splenic flexure resection  
lateral anastomosis L D VON *Surg Clin N Am* 923  
ix, 935
- Annular carcinoma of the rectosigmoid causing obstruc-  
tion, resection with end to end suture L D VON *Surg  
Clin N Am* 923, ix, 937
- T cases of ruptured sigmoid colon R M HAY-  
WOOD JONES *Brit J Surg* 923 ii, 45
- The sigmoid adhesion H A ROTHEIMER *Surg Clin  
N Am* 923, ix, 25
- Diverticula of the sigmoid W D HAGGARD *Surg  
Clin N Am* 923, ix, 95
- The treatment of anus praematurus by pelvic recto-  
sigmoidostomy J HOSKINS *Zentralbl f Chir* 923  
xix, 658
- Methods to obtain continence in the artificial anus  
G BARNES *Polska, Rome*, 923, xxxi, set chir 697
- The rectum C G W BLOO *Practitioner* 923, cx,  
51
- A case of subcutaneous emphysema due to pneumatic  
rupture of the rectum P J FRYER *Boston M & S J*  
923, clxxxviii, 5



The injection of alcohol in the treatment of prolapse of the rectum in infancy and childhood. L. FREUDY and J. B. D. GAGLIARDI. *Lancet*, 1933, col. 76.

Late syphilis of the rectum. DRAVIER. *Ann J Clin Med* 9, 3, 1933, 35.

Constitutional structure of the rectum. C. SYMONS. *Proc Roy Soc Med Lond* 1933, xvi, Sect Surg, 3.

Imperforate anorectal junction—late operation upon the twenty sixth day. G. J. KAY. *Bull et memo Soc anat de Par* 9, 3, 1933, 37.

Some low-grade anal infections. E. H. TINKELL. *Internat J Surg* 1933, xxviii, 3.

An aseptic local anesthetic as applied to the anal region. E. G. MAIR. *N York M J & Med Rec* 1933, cxviii, 90.

The technique of colon irrigation. O. B. SCHILLER. *Internat J Surg* 1933, xxviii, 8.

### Liver, Gall Bladder, Pancreas, and Spleen

The removal of a retention cyst from the liver. J. F. X. JONES. *Ann Surg* 1933, cxviii, 68.

Abscess of the liver, resection of the ninth rib, absence of adhesions, transpleural operation. F. W. PARKMAN. *Surg Clin N Am* 1933, vi, 1, 1995.

A tumor springing from the under-surface of the liver. H. A. ROBERTS. *Surg Clin N Am* 1933, vi, 1, 1971.

Primary carcinoma of the liver. F. H. OLIVER. *J Cancer Research*, 1933, vi, 309.

Studies in gall bladder pathology. W. BORD. *Brit J Surg* 1933, x, 337.

Cholelithiasis, cholecystectomy, operative entry to the main bile duct, primary end-to-end suture, postoperative structure of the duct, hepatoduodenostomy, recurrence of the structure, second hepatoduodenostomy over rubber tube. J. T. BORTON. *Surg Clin N Am* 1933, vi, 1, 1971.

Cholelithiasis, cholecystitis, and cholangitis. A. B. KERR. *Ann Surg* 1933, cxviii, 53.

The etiology of gall-stones. S. F. OLIVER. *J Lab & Clin Med* 1933, viii, 31.

Cholelithiasis and intrathoracic gallstones. M. G. SELLERS. *Surg Clin N Am* 1933, vi, 1, 1995.

Experiences with non-surgical drainage of the gall bladder. J. MYRNE. *Illness M J* 1933, xii, 47.

The gall bladder surgically considered. H. CORRE. *N York M J & Med Rec* 1933, cxviii, 97.

Certain aspects of surgery of the gall bladder. O. F. LAMON. *Ann Surg* 1933, cxviii, 64.

Cholecystectomy. G. HOOVER. *Canadian Pract* 1933, xiv, 19.

Cholecystostomy versus cholecystectomy. J. C. O'DA. *Ann Surg* 1933, cxviii, 48.

Pre-operative preparation of patients with obstructive jaundice: end-results in thirty-four cases. W. WALTERS. *Minnesota Med* 1933, vi, 3.

Primary closure of the abdominal wall in operations on the biliary ducts, with special consideration of cholecystectomy. P. WALTERS. *Arch J Clin Surg* 1933, cxi, 347.

Wandering gallstone. *Arch J Clin Surg* 1933, cxi, 347.

Congenital cyst of the common bile duct, with report of two cases. J. MONTGOMERY. *Brit J Surg* 1933, x, 473.

A method for the permanent sterile drainage of intra-abdominal ducts, as applied to the common duct. P. REE and P. D. McMAHER. *J Exper Med* 1933, cxviii, 124.

The bile factor in pancreatitis. F. C. MARY and A. S. GIOVANNI. *Arch Surg* 1933, vi.

Acute pancreatitis. D. F. JONES. *Surg Clin N Am* 1933, vi, 1.

Acute hemorrhagic pancreatitis, round worm in pancreatic duct. H. M. RICHY. *Brit J Surg* 1933, x, 419.

Necrosis of the pancreas, case of total resection. L. KRAM. *Wochenschr* 1933, xcvi, 687.

Partial obstruction of the pancreatic duct by stones. J. MORRIS. *Brit J Surg* 1933, x, 4.

Surgery of the pancreas: the diagnosis and treatment of primary carcinoma of the pancreas, particularly of the body and tail of the gland. J. I. GIBSON. *Westn Chir* 1933, 19, 1.

Discussion on the surgical treatment of non-traumatic affections of the spleen. J. CAMPBELL and E. H. KITTLE. *Brit M J* 1933, ii, 304.

A case of chronic purpura hemorrhagica with thrombotic splenectomy. B. D. BOWEN. *Bull Buffalo Gen Hosp Buffalo*, 1933, 1.

A case of functional hemolytic anemia associated with pulmonary tuberculosis and old tuberculosis of the hip. Splenectomy, cholecystectomy, relief from jaundice. E. A. O'BRIEN. *Surg Clin N Am* 1933, vi, 1, 1995.

Sarcoma of the spleen. W. D. HADGARD. *Surg Clin N Am* 1933, vi, 1, 1995.

### Miscellaneous

Visceral adhesions and bands: normal incidence. J. BREAST. *Am J M Sc* 1933, cxi, 1.

Torsion of the greater omentum. M. A. McIVER. *Boston M J & S J* 1933, cxi, 1.

Torsion of appendices epiploicae, with report of case. S. O. BLANCH. *South M J* 1933, xvi, 35.

Mesenteric vascular occlusion. L. BRADY. *Arch Surg* 1933, vi, 1.

The fundamental cause of splenomegaly. A. C. VICTOR. *Bull Lying In Hosp City of N York*, 1933, x, 39.

Alimentary tumors of the abdomen. A. W. COLLIER. *N York M J & Med Rec* 1933, cxviii, 65.

Retroperitoneal cysts, with report of a case. J. K. SHERBO. *South M J* 1933, xvi, 1.

Intrapertoneal abscess. S. M. SETHI. *J Roy Army Med Corps, Lond* 1933, xl, 33.

Subphrenic abscess. W. D. HADGARD. *Surg Clin N Am* 1933, vi, 1, 1995.

Pelvic abscess following suppurative appendicitis, drainage through the rectum. M. BRADSHAW. *Surg Clin N Am* 1933, vi, 1, 1995.

A new method for the drainage of intra-abdominal abscesses. J. R. EASTMAN. *J Indiana State M Ass* 1933, xvi, 6.

Two unusual acute abdominal conditions. H. K. PORTER. *Med J Australia* 1933, 1, 67.

Two interesting abdominal cases. A. L. CLIFTON and F. R. HOOK. *U S Naval M Bull* 1933, xviii, 8.

Penetrating wounds of the abdomen. W. M. BELLE. *Am J Surg* 1933, cxviii, 3.

Some surgical emergencies with special reference to the abdominal region. D. POWELL. *Practitioner* 1933, cx, 90.

A pelvic hematoma in male castrated until infected from the intestine. W. G. SYMONDS. *Brit J Surg* 1933, x, 423.

## SURGERY OF THE EXTREMITIES

## Conditions of the Bones, Joints, Muscles, Tendons, Etc

- Bones and joints J L. THOMAS Practitioner 923, 40
- The diagnosis and treatment of bone lesions brief summary of the salient features J C BLOOMGOOD Am J Roentgenol 19 3, 4, [350]
- The traumatic new formation of bone (myositis ossificans and periosteal bone cysts) WIZLAU Beitr klin Chir 923, cxvii, 432 [351]
- Bone cysts (osteitis fibrosa) variety—polycystic osteitis fibrosa J C BLOOMGOOD J Radiol 9 3, 19, [352]
- Defects in the membranous bones, diabetes mellitus, and exophthalmos, with report of case L C GEORGE and J L STURGE Arch Int Med 923, cxiii, 76
- Some observations on the causes and prevention of rickets E L THOMSON Colorado Med 9 2, 22, [353]
- Osteomalacia etiology and report of case occurring in an infant with psychosis N A D TOR Boston M & S J 923, cxixviii, [354]
- Bone diseases—osteoporosis or hypomassia from fixation and non use J C BLOOMGOOD J Radiol 9 3, 24, [355]
- Osteomyelitis report of case with roentgenograms of eleven different fractures in the same patient D M GLOVER Arch Surg 9 404 [356]
- Osteosarcoma (osteoma) generalisata. Mammotumores. Albers-Schönberg disease G G DIAZ Arch Surg 923, 440 [357]
- A case of congenital osteosarcoma R K GEORGE Bull Johns Hopkins Hosp Balt 9 cxliii, 444 [358]
- The pathology of osseous deformities, Paget's disease S M COV J Bone & Joint Surg 923, 757 [359]
- Osteitis deformans in monkeys E P C WHITE Arch Int Med 9 4, 222, 790 [360]
- Osteochondroma disseicans A H FRIEDBERG J Bone & Joint Surg 923, cxii, 3 [361]
- Acute osteomyelitis in children, report of cases J C WILKS and J C WILKS J N Orleans M & S J 923, lxxv, 337 [362]
- Suppurative osteomyelitis due to the colon bacillus N WILLOW Ann Surg 923, lxxvi, 605 [363]
- Aluminum potassium nitrate in the treatment of suppurative conditions, particularly osteomyelitis M TWO Arch Surg 923, lxxvi, 38 [364]
- Tuberculosis of the bones and joints D P WILLARD Pennsylvania M J 923, cxvi, 20 [365]
- The pathological-anatomical bases of traumatic tuber colosa H VON SITTENBERG Schweiz med Wochenschr 1922, lx, 903 [366]
- Tumors of the parathyroid gland in cases of multiple giant-cell sarcoma of the osseous system B GUTHEIN Frankfurt Ztschr f Path, 9 cxviii, 295 [367]
- Syphilis of the bones and joints B F BLUNT Pennsylvania M J 923, cxvi, 20 [368]
- Tumors of bone J E THOMPSON Surg Clin N Am, 923, 1, 493 [369]
- Bone tumors, metastases to the lungs from pure sarcoma J C BLOOMGOOD Ann Surg 9 3, lxxvi, 66 [370]
- Multiple myeloma O S HANSEN J Am M J 923, lxxvi, 20, 10 [371]
- Glass tolerance in chronic arthritis and allied conditions O L K. PRINGLE and S MILLER Lancet, 923, cxxv, 71 [372]

- The arthritis of serum sickness R H BOOTS and H F SWIFT J Am M Ass 9 3, lxxx, 1 [373]
- Forms of tuberculous arthritis and their treatment E WARD Lancet, 923, cxxv [374]
- Infected Charcot joint, not at first recognized as such, treated by the Williams method F W FARRHAM Surg Clin N Am 923, 2, 30 [375]
- The importance and function of the teres minor muscle D M GORDON Edinburgh M J 923, xxx, 6 [376]
- Osteochondroma of the scapula N ALLIBOV Surg Clin N Am 92 2, 54 [377]
- Minor traumatic dislocations of the upper limb P J VERRALL Brit M J 923 1, 97 [378]
- Fibrocystic disease of the upper end of the humerus C P C WACKLEY Arch Radiol & Electrotherap 9 3, cxvii, 24 [379]
- A case of solitary cyst in the humerus A P BROW Edinburgh M J 922, xxxi, 306 [380]
- Hypertrophic elbow A B K W TERN Brit M J 9 3 1, 62 [381]
- A large myxoid sarcoma of the radius in which the tumor was white throughout M J STEWART Brit J Surg 923, 2, 32 [382]
- Brachydactyly due to congenital shortening of the metacarpals G JEAN Rev dorthop 9 xxx, 535 [383]
- A case of multiple exostoses and hypodermic C F SUTTER Proc Roy Soc Med Lond 9 3, xvi, Clin Sect [384]
- Sarcoma (?) of the thigh, with secondary sarcoma (?) of the regional region liver and lungs recovery after extensive deep roentgen irradiation J H SCHROEDER J Am M Ass 923, lxxx, 23 [385]
- Disturbances of the knee joint M A BERNSTEIN Illinois M J 923, cxii, 70 [386]
- Chronic non-inflammatory lesions of the knee joint M S HARRINGTON Arch Surg 9 3, vi, 8 [387]
- Flat or oak feet in children S KILBINGSTON Arch Pediat 923, 21, [388]
- Scatic neuritis and its relation to Saltfoot W MARTIN Ann Med 923, cxvii, 69 [389]
- Isolated disease of the scaphoid B W MORRIS J Am M Ass 923, lxxx, 87 [390]
- Congenital dislocation of the toes H S TRATCHER and T WARDLOW J Bone & Joint Surg 923 [391]
- Case of bilateral hammer great toes A E M WOOLF Proc Roy Soc Med Lond 9 3, xvi, Clin Sect [392]
- Sports injuries F ROSS Practitioner 9 3, cx, 99 [393]

## Fractures and Dislocations

- Outline of treatment of fractures syllabus adopted at the Boston Conference, April, 9 Arch Surg 9 3, vi, 7 [394]
- The modern treatment of fractures and luxations C EWALD Wien klin Wochenschr 9 cxiv, 493, 57 [395]
- Ultra violet radiation in the treatment of fractures A J PACINI Am Med 9 3, cxviii, 701 [396]
- Management of fractures J A CALDWELL Cincinnati M J 923, 2, 439 [397]
- Some notes on the treatment of fractures W A LANE Lancet, 923, cxxv, 16 [398]
- A five year survey of the routine treatment of fractures by operative methods A YOUNG Brit M J 923, 2, 209 [399]

- The temporary plating of fractures of the long bones  
O H ELLIOTT. *Brit M J* 1922, 2, 4. [342]
- Fifty two cases of acetabular osteomyelitis for recent  
fracture and closed pseudarthrosis of the femur. M  
CHAMBERLAIN. *Arch franco-belges de chir*, 922, xiv 994
- The treatment of ununited fractures. W C CALDWELL.  
*Am J Surg* 923, xxxv, [339]
- The treatment of ununited fractures by bridge grafts  
D DUFF. *Brit M J* 922, 2, 215. [339]
- Recurrent dislocation of the shoulder. J A HARTWELL.  
*Ann Surg* 9, 3, lxxvii, 8
- Fracture-dislocation of the humeral head. W V  
HOOKE. *Boston M & S J* 9, cxxxviii, 960. [343]
- Congenital bilateral forward location of the head of the  
radius. M CHURCHMAN. *Rev d'orthop* 1922, xxix  
549. [343]
- A series of injuries to the rat. P MORTON-ORRIST.  
*Bull et mém Soc anat de Par* 922, xcii, 407.
- Dislocation of the semilunar carpal bone. H B KAYE.  
*J Am M Ass*, 92, lxxx, 19. [343]
- Fractures of the carpal scaphoid. A F TILLEY. *J  
Lancet* 923, xliii, 8
- The treatment of congenital dislocation of the hip  
C H BRADFORD. *J Bone & Joint Surg* 922, xxi, 76.  
[341]
- Three cases of early location during the course of cost  
algia. P TILLEY and J VIX. *Bull et mém Soc anat  
de Par* 922, xcii, 4, 3
- Two cases of isolated fracture of the acetabular rim in  
location of the hip. C CHITTENDEN and L HAYES. *Rev  
d'orthop* 1922, xxix, 543. [341]
- Fracture of the femur. M BRADFORD. *Surg Clin  
N Am* 922, 4, 34. [342]
- Fracture of the patella. F W PARKMAN. *Surg Clin  
N Am* 92, 4, 307.
- Infracted patella. E D MARTIN. *Surg Clin N Am*,  
922, 4, 309.
- Anterior and lateral subtrochanteric location. C BLACK  
and L VICKSON. *Bull et mém Soc anat de Par* 9, 4, xix,  
354.

#### Surgery of the Bones, Joints, M. actes, Tendons, Etc.

- Some important points in bone surgery. A WATKINS.  
*J Arkansas M Soc*, 1923, xix, 45.
- Bone grafting. W R ADAMS. *Surg Gynec & Obst*,  
19, 3, xxxvii, 97. [342]
- Observations on the correction of deformities of long  
standing. A WATKINS. *J Am M Ass*, 1923, lxxx, 8. [342]
- A new autoclave. P MORTON-ORRIST. *Ztschr f orthop  
Chir* 921, xlii, 4.
- Brucine and the fore- and after-treatment.  
A GOTTLIEB. *Californian State J M* 923, xxi, 9.
- Tendon reconstruction. M BRADFORD. *Surg Clin  
N Am* 922, 4, 363.
- The efficient treatment of acute and chronic, simple,  
traumatic synovitis (hemarthrosis and hyarthrosis)  
by repeated aspirations and moderate active mobilization

without splinting. C A McWILLIAMS. *Ann Surg* 1922,  
lxxvi, 677. [342]

The choice of the site for amputation with reference to  
problems. H A ALBRECHT. *Verhandl d Russ Chir  
Petrograd* 922.

The development and aims of amputation technique.  
J ZIEGLER. *Chirug Mit Zeits* 9, 2, lxi, 906.

A method of facilitating plastic operations on the deformed  
muscle. F LANGE. *Zentralbl f Chir* 9, 2, xiv, 104.

The Krackhammer arm. J FRANKEL. *Zentralbl f  
Chir* 922, xlii, 793.

Resection of the distal end of the ulna for shortening of  
the radius following fracture. C HOWARD. *Californian State  
J M* 9, 2, xxi.

Transplantation of the tensor fasciae latae in cases of  
wrenched glenohumeral joint. A T LEROY. *J Am M Ass*,  
923, lxxx, 543. [343]

The end result in four cases of severe destructive injury  
to the hip. T S MERRITT. *J Bone & Joint Surg* 1923,  
xii, 70. [344]

Muscular hernia through the anterior compartment of  
the right thigh with loss of spongy substance following  
war wound. Medical cure by the use of perineal flap.

BOYD. *Bull et mém Soc anat de Par* 19, 2, xxi, 374.

Case of myeloma of the outer condyle of the femur  
showing the result of bone grafting. A H TODD. *Proc  
Roy Soc Med Lond* 19, 3, xvi, Chir Sect 3.

Plastic resection of the collateral ligament in  
knee joint. R BOYCE. *Arch f Chir* 9, 2, xxi, 757.

Knee lesions and operations based on 100 personal cases.  
F J COTTON. *Surg Clin N Am* 9, 2, 4, 97. [344]

Report of the commission appointed by the American  
Orthopedic Association for the study of stabilizing opera-  
tions on the foot. A G COOK, W G STURTEVANT and E W  
RYLSON. *J Bone & Joint Surg* 9, 3, xxi, 23. [344]

Primary resection of the astragali and both naviculars.  
G LAMBERT. *Arch franco-belges de chir* 923, xiv, 103.

Plastic operations on the joint for the correction of  
bilateral valgus. E HETTMANN. *Zentralbl f Chir* 9,  
xlii, 1067.

New treatment of flat-foot. J ZACZEK. *Polska gaz lek*  
922, 4, 447.

#### Orthopedics in General

Speech development in orthopedic cases. C G STIVELL.  
*Californian State J M* 922, xxi, 4.

The purpose and structure of the orthopedic concert.  
H A ALBRECHT. *Verhandl d Russ Chir Petrograd* 92.

The chemical treatment of tuberculosis at the orthopedic  
institutes of Petrograd. WARDEN. *Verhandl d Kong  
Russ Chir Petrograd*, 922.

Judging actual and apparent shortenings and lengthen-  
ings of the lower extremities. R DRACHTER. *Arch f  
orthop Unfall Chir* 93, xxi, 8.

The future of orthopedic surgery in the South. W B  
OWEN. *South M J* 1923, xvi, 3.

## SURGERY OF THE SPINAL COLUMN AND CORD

- The treatment of paralytic affections involving the cer-  
vical vertebrae. H L LOWMEYER. *Californian State J M*,  
923, xxi, 3. [347]
- Lateral subluxation of the third cervical vertebra on the  
fourth. GERTZ. *Arch franco-belges de chir* 923, xiv  
939. [347]
- Location fracture of the cervical spine. E VANDERPUT.  
*Arch franco-belges de chir* 19, 2, xiv, 947. [347]

Sacralization of the fifth lumbar vertebra in various  
lumbar cases and in spondylolisthesis. M LUCIEN and  
FLEURY. *Bull et mém Soc anat de Par* 19, 2, xxi, 187.

Fracture of the sixth cervical vertebra. W P BRAD-  
STOCK. *Surg Clin N Am* 9, 2, 377.

Lumbarization vertebrae (Schäfer) and its anatomical  
basis. J HALL. *Arch f orthop Unfall Chir* 19, 2,  
xii, 57.

- The place of operations for spinal fixation in the treatment of Pott's disease G R GIBBES *Brit J Surg* 923, 2, 37 [343]  
 Osteomyelitis in Pott's disease J CAY & M GALLAGHER *J de chir* 922, 2, 555 [349]  
 A proposed operation on the cervical column V ROSSMAN *Zentralbl f Chir* 9 212 1443  
 Operation as part of the conservative treatment of Pott's disease W I C WHEELER *Fracture* 9 212 14 [349]  
 More operations KOK SW *Verhandl d Kong Russ Chir Petrograd*, 19

- Ankylosing spondylitis L SCHNEIDERMAN *Polska gaz lek* 92 1, 573  
 Inflammation causing ankylosis of the cervical spine HACHENBERG *Zschr f arztl Fortbild* 9 2, 21, 59  
 Crush fractures of the spine J G WALLACE J Bone & Joint Surg 9 3, 221 23 [349]  
 Fractures of the spine with cord involvement W J MEXTER J Bone & Joint Surg 923, 2, 21  
 Report of an unusual case of typhoid spine with symptoms of spinal cord affection H TURER *Brit M J* 9 3, 14

## SURGERY OF THE NERVOUS SYSTEM

- A traction lesion of the right brachial plexus involving the fifth and sixth groups A F M WOOLY *Proc Roy Soc Med Lond* 9 2, 21, Clin Sect  
 Brachial neuritis due to cervical ribs W W ALLEN and J PHILLIPS *Brit M J* 923, 2, 3 p  
 Injuries of the nerves of the arm H URBANOWSKI *Chir f Leipzig* 9 1222, 295 [350]  
 Calcareous deposits in the posterior spinal roots of the aged L BLANCHARD *Bull et mèm Soc anat de Par* 19 2, 221, 404

- The indications for posterior rhizotomy based on sensory cases R LARSEN *Lyon chirurg* 9 212 447 [350]  
 Contributions to the surgery of the sympathetic nervous system J J AL Spitalu 9 212 3 [350]  
 Complete rupture of the sciatic nerve in subcutaneous fracture of the femur H LOWMEYER *Arch f orthop Unfall Chir* 9 212, 97  
 Sciatic palsy and sciatica O KLEINSCHMIDT *Klin Wochenschr* 9 2, 2, 730 [351]

## MISCELLANEOUS

## Clinical Entities—General Physiological Conditions

- Endocrine balance M L S COLE J Missouri Stat M 22, 9 2, 22, 24  
 The positive achievements of endocrinology A S BURCHARDT *Endocrinology* 9 212 8  
 The treatment of shock S LEVIN *Internat J Surg* 9 3, 222, 7  
 Diabetes mellitus (collective review) *Med Sc Abs & Rev* 923, 2, 355  
 Influence of infections on carbohydrate tolerance in diabetes mellitus R A KIM *Med Clin N Am* 9 3, 21, 553  
 A case of papulomatosis of an abscess cavity W KRAUS *Zschr f Path* 9 212, 59 [351]  
 The tumor problem and studies regarding epithelial growth H BURCHARDT *Münchenber und Wochenschr* 92 122, 365  
 The cancer patient and the family physician: obligation to know F FREDERICK *Canadian Pract* 923, 212, 7  
 Cancer research and its needs J BROWN *Med Press* 923, 212, 7  
 Multiple pathology and the cancer problem W S BARNES *Illness M J* 9 3, 212, 20  
 Is there any relationship between the development of cancer and the nerves C S FAGER *Zschr f Krebsforsch* 922, 212, 5  
 Basal-cell carcinoma of the skin J S HORSLEY *Surg Clin N Am* 9 2, 21, 247  
 Colloid carcinoma D PARRAN *Ann Surg* 9 3, 212, 90  
 An experimental study on the question of the development of cancer from x-ray rays H JORDAN *Zschr f Krebsforsch* 19 212, 30  
 Parathyroid hyperplasia and bone destruction in generalized carcinomatosis P KLEINER *Surg Gynec & Obst* 923, 212, 21  
 The electrolytic fixation of cadmium-colloidal substances on embryonic and neoplastic cells and its importance in the

- diagnosis and treatment of cancer E WASSER *Bull Acad de mèd Par* 9 1222, 216 [351]  
 The course of mortality from cancer in Baltimore W T HOWARD *J Am M Ass* 923, 1222, 7  
 A transplantable metastasizing chondro-rhabdomyosarcoma of the rat F D B LLOYD and M R C STILES *J Cancer Research* 9 2, 2, 9 [352]

## sera, Vaccines, and Ferments

- Symptoms of anaphylaxis following the prophylactic subcutaneous injection of tetanus antitoxin J ANDERSON *Zentralbl f Chir* 92 212, 609

## Blood

- The control of the circulation G KIMST J I State M Soc 9 3, 212  
 The blood pressures of healthy men and women B S JONES *J Am M Ass* 9 3, 1222, 3  
 Microchemical analysis of the blood and its theoretical and practical interpretation R BARBARA *Bull Porto Rico M Ass* 9 212, 239  
 Some effects of exposure to sodium on the blood platelets J C MOTTREAU *Proc Roy Soc Med Lond* 9 3, 212, Sect Path 6  
 The changes in the physicochemical structures of the blood plasma with accelerated sedimentation of the blood cells following treatment with irritant surgical operations and chemicals W LOYER and H LOYER *Zschr f d exp Med* 9 212, 20 [352]  
 The catalase content of the blood in carcinoma ZIEGLER *Zschr f Krebsforsch* 9 2, 212, 263  
 Embolism of the right brachial artery in lobar pneumonia A H D SMITH *Brit M J* 9 3, 2, 3  
 Thrombosis of the superior mesenteric artery TRUFFE and CAYAC *Bull et mèm Soc anat de Par* 9 2, 212, 406  
 Chills following transfusion of blood R LEWIS *J Am M Ass* 9 3, 1222, 247

## Blood and Lymph Vessels

- The structure and topography of the blood vessel trunks  
Verhaidt d Koenig Rose Chw Petrograd, 92
- Contributions to the anatomy of the capillaries  
The contractile elements in the walls of the blood capillaries  
B Verhaidt Zischl f Anat East schlingenspeich  
9, iv, 30
- Arterial hypertension L S Mitze J Missouri State  
M Am 10 3, 22
- Two cases of aneurism B Brooks Surg Clin N  
Am 9 2, 11, 657
- Aneurism of the aorta, with remarks concerning the  
effects of aneurism on the coronary circulation R G  
Torrey Med Clin N Am 9 1 vi, 96
- A case of "aneurism of the aorta" (rupture  
of the aorta with an intraluminal hematoma) B Roman  
Bull Buffalo Gen Hosp Buffalo, 9 1, 17
- Aneurism of the hepatic artery J Finkenzwald and  
K H Tan Extram Am J M Sc 9 3, 417
- Right popliteal aneurism M Bradbury Surg Clin  
N Am 9 2, 355
- Three cases of arterial embolism E Michailov  
Acta chirurg Scand 9 2, iv 417
- Arteriovenous fistula of the femoral vessels (aneurismal  
type) on level with the origin of the profunda [352]  
Matus Surg Clin N Am 9 2, 45
- Note on adhesions of the left common iliac vein K  
Ohashi Jpn Med Assoc 9 2, 4, 95
- Arterial decalcification C L Callender Am Surg  
9 3, 187, 188
- Periarterial sympathectomy A E Halstead and  
J Christopher J Am M Am 9 2, 187, 71
- Periarterial sympathectomy E P Lewis Am  
Surg 9 3, 187, 188
- The technique of periarterial sympathectomy and  
some new indications R Langer Presse med Par  
9 27, 98, 99
- Perivascular leucocytosis in the early stages of thrombo-  
angiitis obliterans H M Thomas Am J M Sc 9 3,  
417, 86
- The significance of lymphatic involvement in infections  
W J Mayo J Am M Am 9 3, 187, [354]

## General Bacterial Infections

- Electro localization of the streptococcus-pneumococcus  
group factor in the production of disease P C Rose  
N Am Clin Med 9 2, 4
- Tetanus report of 6 cases at the Massachusetts  
General Hospital R H Miller Surg Gynec & Obst  
9 3, 187, 90
- A case of tetanus without evident source of infection  
G W Gooker and C M Rattr Med Press, 923
- 927, 73
- A case of tetanus, with comment J O'Keefe Post  
Graduate 9 3, 98, 96
- Infection due to the bacillus Eberth Gaffky slight  
intestinal disease E W Moscovici Arch f klin  
exp Med 9 2, 4, 95

## Surgical Diagnosis, Pathology and Therapeutics

- A simple method for calculating the basal metabolic rate  
R L Haden J Lab & Clin Med 9 3, vii, 37
- The symptom of vertigo H H Varr Cincinnati  
J M 9 2, 3, 410
- The fractional test meal method of Rikhsas errors the  
single test meal of Ewald M Cohen N York M J &  
Med Rec 9 2, 187, 94

The relative value of some of the commonly used methods  
for the detection of occult blood in the stool H A Res-  
nary J Lab & Clin Med 9 2, vii, 365

- Combined cauter and lumbar puncture as aid in the  
diagnosis of compression of the spinal cord J B Ayra  
J Bone & Joint Surg 9 3, 8
- The clinical value of the pathologist W C Mac  
Carty Ann Clin Med 9 2, 1, 70
- Practical surgical pathologic observations and deduc-  
tions A C Brooks J Am M Am 9 3, 187, 188
- Surgery for the tuberculous H G Wetherill J Am  
M Am 9 2, 187, 6
- Postoperative treatment J Salvo Am J Surg  
9 3, 187, 6
- Medical management in the postoperative care of  
abdominal cases J T Fotheringham Canadian Pract  
9 2, 187, 8
- The reverse selectin bacteriostatic action of acid  
fuchsin J W Chubbuck J Exper Med 9 2, 187, 188
- Further clinical experience with insulin (pancreatic  
extracts) in the treatment of diabetes mellitus F G  
Bastin, W R Campbell, and A A Fletcher Brit  
M J 9 2, 187, 188
- Treatment by diathermy W J Turnbull Brit M J  
9 3, 4, 143

## Experimental Surgery and Surgical Anatomy

- The accommodation in the peritoneal cavity of gases  
injected into the case L Torrance Riforma med  
9 2, 187, 188
- Hemoplastic transplantation of splenic of adult frog  
skin R Gansel Deutsche med Wochenschr 9 2, 187,  
51
- The topography of the nerves of the brachial plexus and  
axillary vessels at their entrance into the subclavicular  
space E Olvitz Presse med Pa 9 2, 187, 188
- Anatomical, experimental, and clinical investigations  
concerning the phrenic nerve and the innervation of the  
diaphragm W Felix Deutsche Zischl f Chir 19  
417, 86

## Roentgenology and Radium Therapy

- The effect of the war on the development of roentgenol-  
ogy P M Hickey Am J Roentgenol 9 3, 2, 70
- A note on the use of the Bucky Potter diaphragm with  
the fluoroscope W C Al Aris Am J Roentgenol  
9 3, 2, 69
- An automatic switch for Bucky diaphragms E A  
Powell Am J Roentgenol 9 3, 67
- The principles of stereoradiation J B W. Jr J Radiol  
9 2, 187, 9
- The demonstration of obstructed Hatcherian teeth by  
the roentgen ray J H Stokes and B S Gardner J  
Am M Am 9 2, 187, 188
- Radiography as an independent specialty R Lower  
Prog de la Clin Med, 9 2, 187, 188
- Recent advances in X-ray therapeutics R Morton  
Canadian Pract 9 3, 187, 188
- Radium plaster walls for X-ray treatment of cancer  
A E Bancia Arch Radiol & Electrotherapy 9 3,  
187, 188
- The problem of ray damage W Finkenzwald Am J  
Roentgenol 9 2, 187, 188
- A summary of the determination of X-ray intensities  
H Schmitt J Radiol 9 2, 187, 188

A new investigation of the problem of roentgen ra-  
dium O. GLAUSER. *Am J Roentgenol* 1935, 4: 1359  
Examination measurements G. LALLIA. *Am J Roent-*  
genol 1935, 4: 451

A simple method of treating superficial lesions of the  
penicillin and intracutaneous conditions from below M. R. J.  
H. *Arch Radiol & Electrotherapy* 1935, xiv: 42

The relation of radiology to cancer control T. A.  
Gavin. *South M J* 1935, xvi: 100

Röntgenotherapy in melanoma J. D. Cusson. *Am*  
*Med* 1935, xiv: 469

Deep X-ray therapy for inoperable anal canal disease  
H. J. HAZARD. *Med J Australia* 1935, 6: 4

Deep X-ray therapy: the technique of the irradiation  
C. W. PETER. *Lancet*, 1935, cccv: 5

The new way for the new higher voltage shorter wave  
length roentgenotherapy J. T. STRICK. *J Med Soc N*  
*Jersey* 1935, 32: 9

The problem (high potential measurement) as a factor in  
radiotherapy (high voltage) K. H. H. *J Radiol*  
1935, 15: 15

The necessity for caution in the employment of high  
energy roentgen rays in therapeutic treatment  
C. W. PETER. *Arch Radiol & Electrotherapy* 1935, xiv: 42

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The use of roentgen rays in the treatment of cancer  
J. D. Cusson. *Am Med* 1935, xiv: 469

The action of barium chloride of radium emanation on  
copious in part T. L. R. M. L. R. M. J. Cancer  
Research, 1935, 6: 63

The response of various types of cancer to  
D. Quin. *Canada Pract* 1935, 31: 12

### Hospital & Medical Education and History

The operating room rules for new doctors, to  
students regarding preparation for surgical operations and  
the instrument T. L. R. M. L. R. M. J. Cancer  
Research, 1935, 6: 63

Graduate training for the physician C. M. C. R.  
N. Australia M. J. 1935, 7: 1

Postgraduate work in surgery J. W. D. H. N. Med  
J. Australia, 1935, 10: 1

The day of surgery J. W. D. H. N. Med J. &  
Med Rec 1935, 10: 1

Medical law in the event of the death of a patient H. M.  
R. M. M. J. Surgery 1935, 10: 1

Pasture and medical law L. J. L. C. M. J.  
Med 1935, 10: 1

The fifty years of surgical progress F. L. M. J. C.  
Med 1935, 10: 1

The progress of surgery and the future of the surgical  
operation J. D. H. N. Med J. & Med Rec 1935,  
10: 1

The history of evolution in surgery as seen in the  
teachings of the World War A. R. M. J. C. M. J.  
Med 1935, 10: 1

Comments on the progress of surgery and the future  
of the surgical operation J. D. H. N. Med J. & Med Rec  
1935, 10: 1

### Log & Medical

The medical progress in the future of the surgical  
operation J. D. H. N. Med J. & Med Rec 1935,  
10: 1

The progress of surgery and the future of the surgical  
operation J. D. H. N. Med J. & Med Rec 1935,  
10: 1

The progress of surgery and the future of the surgical  
operation J. D. H. N. Med J. & Med Rec 1935,  
10: 1

The progress of surgery and the future of the surgical  
operation J. D. H. N. Med J. & Med Rec 1935,  
10: 1

## CYNOLOGY

### Uterus

A new method of treatment of uterine cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

### Adrenal and Parathyroid Glands

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1

The use of roentgen rays in the treatment of cancer  
J. D. H. N. Med J. & Med Rec 1935, 10: 1



- Cranial stress in the fetus during labor and the effects of excessive stress on the intracranial content F. HOLL  
*Am J Obst & Gynec Brit Imp* 9 2, 227, 55 [371]
- The diagnosis and treatment of cerebral infarct in the newborn F. C. GRAF *Therap Gaz* 9 3, 21, 11
- Laceration of the spinal cord in breech extraction as an important cause of fetal death and of purpura in childhood B. CAOTIKOS *Am J M Sc* 9 3, 279, 92 [372]
- Some obstetrical problems involved in stillbirths and deaths of newborn infants C. S. BUCK *J Low Med* 1 1, 21 Soc 9 3, 222, 4 [373]
- Hemorrhage in the newly born W. R. (REV.) *Med J Australia*, 922, 11, 76 [374]
- The treatment of haemorrhages of the newborn not including the brain and spinal cord J. C. HILLY *Therap Gaz* 9 3, 21, 7
- Respiratory forms of tuberculosis in the infant M. LARÉ *Prog de la clin Madrid* 9 22, 357

## Miscellaneous

- How far should the teaching of obstetrics be carried in medical schools J. L. JAMES *Hahnemann Month* 9 3, 170, 20
- Review of the progress of obstetrics and gynecology for the year 9 H. B. M. THURMAN *Med Times* 9 3, 11
- Twentieth century obstetrics—a criticism A. B. SOW *Nebbraska Stat M J* 9 3, 170, 6
- Obstetrical experiences during fifteen years of general practice H. GILBERT *Med J Australia*, 922, 11, 63
- A report of 1,000 obstetrical cases in private practice M. T. BRYSON *J Med Am Georgia* 9 3, 222, 3
- Some practical difficulties in obstetrics and gynecology C. BRIDGES *Brit M J* 9 3, 1, 80
- How to meet obstetrical emergencies G. GILLIES *Illness M J* 9 3, 210, 37

## GENITO-URINARY SURGERY

## Adrenal Kidney and Ureter

- Malignant tumors of the suprarenal gland W. E. STOVES *J Am M Ass* 9 3, 122, 7 [374]
- Renal functional test and their value in urological medicine and surgery L. BEYER *Med Clin N Am* 1922, 4, 453
- Dwelling in the blood and urine as a measure of renal efficiency G. V. HARRISON and R. D. LAWRENCE *Lancet* 922, 10, 169 [374]
- The action of hexamethylenetetramine M. G. SUTTON *Med J Australia* 9 3, 1, 3 [374]
- Unilateral atrophy A. FULLERTON *Burg Gynec & Obst* 1923, 22, 17, 0 [374]
- Peritoneal insufflation of oxygen W. C. QUINN *J Urol* 9 3, 12, 3 [375]
- An experimental study of various hemostats used in pyelography O. S. LA SLEY and H. R. M. ALLEN *J Urol* 9 3, 12, [375]
- The choice of pyelographic mediums R. C. GRAVES and L. M. D. MOORE *J Am M Ass* 9 3, 12, 68 [375]
- Renal torsion W. J. BRASCH *J Urol* 9 3, 12, 53 [375]
- An unusual kidney T. A. POTTS *Med J Australia*, 922, 11, 670
- The diagnosis and surgical treatment of accessory kidney A. MÜLLER *Zschr f urol Chir* 9 3, 14, 376 [376]
- Perforating wound of the kidney with secondary nephrectomy H. A. M. & LESTER *Ann Surg* 9 3, 12, 11
- A case of symmetrical cortical necrosis of the kidney occurring in an adult male J. HANFORTH *J Path & Radiol* 9 3, 221, 40
- Renal calcinosis associated with urethral conditions in women E. M. STANTON *Am J Obst & Gynec* 9 3, 7, 376 [376]
- Renal calcinosis D. N. LEE *DEATH WYOMING M J* 1923, 22, 240 [376]
- Multiple renal calculi with infection—case study with two-stage operation O. J. OBERHOLZER *Bull Buffalo Gen Hosp Buffalo* 9 3, 35
- Complications of the surgical removal of stones from the kidney and ureter V. C. H. *J Lancet* 9 3, 21, 4
- Large hemorrhagic cyst of the right kidney BOTREA ROUMEL *Bull etud Soc anat de Par* 9 22, 37

- Congenital hydronephrosis and hydro ureters H. MARSHALL and M. S. REED *Arch Pediat* 9 3, 21, 58
- Some cases of hydronephrosis R. I. O'NEIL *J Urol* 9 3, 12, 69
- The treatment of hydronephrosis caused by abnormal renal vessels G. ELLIOTT *Zschr f urol Chir* 9 3, 14, 378 [378]
- Non tuberculous infections of the kidney F. H. COLE *J Michigan Stat M Ass* 9 3, 220, 3
- The clinical picture of chronic inflammatory diseases of the renal coverage J. NEULAND *Zschr f urol Chir* 9 3, 14, 400 [378]
- Tuberculosis of the kidney M. W. W. W. *J South Carolina M Ass* 9 3, 221, 360
- Renal tuberculosis W. C. QUINN *Burg Clin N Am* 9 3, 12, 3
- Syphilis of the kidney T. G. SCHWABEL *Med Clin N Am* 9 3, 12, 65
- Spontaneous healing in destructive pyelonephrosis (report of two cases) E. M. W. THOM *Bull Buffalo Gen Hosp Buffalo* 9 3, 35
- Pyelocystitis W. C. STILLING *J Urol* 9 3, 12, 50
- Pylitis from the standpoint of the internist N. A. J. *Am Inst Homoeop* 9 3, 22, 63
- Tumors of the kidney H. A. OGDEN *Canadian M Ass J* 9 3, 22, 3 [378]
- Adurocarcinoma of the kidney J. S. HODGLEY *Burg Clin N Am* 9 3, 22, 33
- Endothelioma of the left kidney extending down the ureter and projecting into the bladder removal death four months later W. G. SWENNER *Brit J Surg* 9 3, 2, 43
- Types of kidney positions and the corresponding operations V. A. JAMORILLO *Indag Med, Petrograd* 9
- The cause and prevention of secondary hemorrhages after nephrectomy E. REIER and P. ROETTER *Zschr f urol Chir* 9 3, 390 [379]
- The anterior incision in secondary nephrectomy H. A. ROYSTER *Burg Clin N Am* 9 3, 22, 73
- The immediate results of nephrectomy L. OLEU *Med Press* 9 3, 22, 5 [379]
- A case of reduplication of the left ureter and left renal pelvis R. F. O'NEIL *J Urol* 9 3, 12, 63
- Ureteral dilatation in lower urinary tract obstruction F. J. PARKINER *Bull Buffalo Gen Hosp Buffalo* 9 3, 35



The value of ureteropyelography in disease of the ureter and kidney pelvis. J. M. M. VREE and A. L. SIKKENS. *Med Herald*, 1933, xia, 9.

### Bladder, Urethra, and Penis

Diverticula of the bladder in children. A. HIRKA. *Surg. Gynec. & Obst.* 1933, xxxvi, 7.

A case of mixed tumor, epitheliocarcinoma, of the bladder of probably alioid origin. C. LIDORHANT. *J. Urol.* 1933, xlii, 373. [309]

Bladder neck obstructions, their surgical relief in older cases to the Young pouch. W. B. PARKER. *Surg. Gynec. & Obst.* 1933, xxxvi, 36. [310]

Associated closed traumatic ruptures of the posterior urethra and bladder. L. PRUSSOV. *Lyon chir.* 1933, xii, 535. [311]

Infection of the bladder and the kidneys associated with congenital deformity of the umbowal space. W. P. BRADSHAW. *Surg. Clin. N. Am.* 1933, viii, 347.

The formation of kistofore from the mucosa of the bladder from potassium permanganate. K. PRIBEL. *Gyóg. és anat.* 1933, 1, 666.

T. cases of chronic simple cystitis of unusual etiology. M. LA. VIERA. *J. Am. M. Ass.* 1933, 1, 322, 3.

Cystitis fungosa. M. J. KARLIN. *J. Akad. Zhenik. Bol.* Petrograd, 1933, xxi, 85.

The regeneration of resected urinary bladder in rabbits. H. SCHILLER. *Surg. Gynec. & Obst.* 1933, xxxvi, 24. [312]

Operations for urinary fistula. E. SCHOKOV. *Meditsinskiy i Ginekologicheskii* 1933, 1, 54.

Scrofulous extrusion of coccyx of the gonococcus isolated from cases of urethra and subcutaneous abscesses in the male. Report to the Medical Research Council. W. J. TILLOTSON. *J. Roy. Army Med. Corps*, Lond. 1933, 3, 21.

Syphilitic genital chancre. M. B. PAROVAGHAN and H. GOODMAN. *Am. J. Syphilis*, 1933, vii, 43.

Conorrhion and its complications in the male affections of the four naviculars. N. E. APOSTOL. *Interv. J. Surg.* 1933, xxxvi, 24, 69.

A case of epithelioma (?) of the penis. A. E. M. WOOD. *Proc. Roy. Soc. Med. Lond.* 1933, xvi, Clin. Sect.

### Genital Organs

Genital malformations and their treatment. O. GOSCHOR. *Chir. med.* 1933, xi, 52.

An unusual complicated malformation of the male sexual organs and its development. Hypoplastic renal rest with abnormally opening double ureters and abnormal position of one ejaculatory duct. W. RICH. *Zucker f. Chir.* 1933, xi, 6.

A third testicle as an intestinal appendage. A. J. F. O'CONNOR. *Arch. f. path. Anat.* 1933, ccccix, 8.

The absorbing power of the tunica vaginalis in hydrocele. L. TORRACA. *Arch. ital. di chir.* 1933, vi, 404.

The present position of testicle transplantation in surgical practice. Preliminary report of new method. M. THORCK. *Endocrinology* 1933, vii, 77.

The Stenck operation. P. SCHMIDT. *Wien. Rikol.* 1933, 1, 1.

The Stenck operation. Report of twenty six cases with endocrine interpretation. H. BENJAMIN. *Endocrinology* 1933, vii, 776.

Ligation of the vessels (epididymectomy) by Stenck's method as means of rejuvenation in old age and in other conditions such as impotence and depression. K. SAJOS. *Ungar. f. Lager* 1933, xliii, 397-400. [313]

A case of tuberculous epididymitis terminating in tuberculous meningitis producing sarkoidosis of the spinal fluid. B. L. CHAWWED. *Med. Clin. N. Am.* 1933, vi, 1073.

An analysis of 1,000 testicular substance implantations. L. L. STANLEY. *Endocrinology* 1933, vii, 787. [314]

Intratestal injections of salt solution in gonorrheal epididymitis. W. RUCKERT. *Deutsche med. Wochenschr.* 1933, xliiii, 313.

Excision of the spermatic cord by division of the internal spermatic artery. W. RUCKERT. *Deutsche med. Wochenschr.* 1933, xliiii, 313.

Torsion of the spermatic cord. H. HILAND. *Klin. Wochenschr.* 1933, xliiii, 313.

A rare anomaly found in congenital right inguinal hernia, tubular diverticulum or prolongation on the right seminal vesicle extending into the scrotum as seen present of the spermatic cord. R. M. TAYLOR. *Surg. Clin. N. Am.* 1933, viii, 35.

The frequent association of varicocele on the right side with bladder disturbances of nervous origin. A. AMER. *Deutsche med. Wochenschr.* 1933, xliiii, 6.

The prostate problem. D. W. MACKENNIE and M. J. SERVO. *Surg. Gynec. & Obst.* 1933, xxxvi, 1.

The use of radium in the treatment of benign hypertrophy of the prostate. W. A. DIXON. *Minnesota Med.* 1933, 1, 9.

A study of neurectomy in prostatictomy. J. D. BARNES and W. M. SHERROD. *Surg. Clin. N. Am.* 1933, viii, 303.

Suprapubic and perineal prostatectomy: the advantages of each. E. D. VON. *Australia. Stat. M. J.* 1933, viii, 9.

A simple method of draining the bladder after suprapubic prostatectomy. E. D. MARTIN. *Surg. Clin. N. Am.* 1933, viii, 377.

Recovery of the benign prostate. W. A. BRY. *Surg. Gynec. & Obst.* 1933, xxxvi, 39. [315]

A unique case of coexistent tuberculosis and syphilis in the genital tract. D. M. P. MACK. *J. Am. M. Ass.* 1933, lxxv, 39.

The chemical aspects and treatment of congenital tuberculosis. F. A. VERHARD. *d. Kong. Rens. Chir. Petrograd*, 1933, 1, 1.

The treatment of genital tuberculosis with iodine. M. VERHARD. *d. Kong. Rens. Chir. Petrograd*, 1933, 1, 1.

The iodine treatment of genital tuberculosis. L. VERHARD. *d. Kong. Rens. Chir. Petrograd*, 1933, 1, 1.

Castration of the male by the X-ray. H. R. SCHWARTZ. *Deutsche med. Wochenschr.* 1933, liii, 586. [316]

### Allopathic Surgery

A grade urinary routine suggested as practical for the general practitioner. M. H. WYMA. *J. South Carolina M. Ass.* 1933, xii, 372.

Important points in the technique of roentgenological examinations of the urinary tract. B. H. NICHOLS. *Am. J. Roentgenol.* 1933, x, 9. [317]

The qualitative estimation of iodine in urine. H. L. MANN. *J. Lab. & Clin. Med.* 1933, viii, 371.

The causative factor of renal compression in upper urinary obstruction. G. C. BURR. *J. Michigan State M. Soc.* 1933, 1, 1.

A simple method of introducing neostrophon catheter. N. F. OCKENFELS. *J. Am. M. Ass.* 1933, lxxv, 30.

Newer aspects of urinary surgery. D. N. LUKHARATH. *J. Iowa Med. Soc.* 1933, 2, 303. [318]

Genito-urinary operations. F. S. EDWARDS. *Pediatrics* 1933, vi, 6.

## SURGERY OF THE EYE AND EAR

## Eye

- Standards of vision for scholars and teachers in council schools N B HARRIS Brit M J 923 58
- Intermittent contraction of the visual fields in pregnancy C F FRIDA Arch Ophth 93 in, 30
- Blindness of pituitary origin and organotherapy M KERN Am J Clin Med 93 xxx, 8
- Paralysis of divergence, with report of three cases due to epidemic encephalitis J H DUNNIGTON Arch Ophth 923 in, 30
- Certain anatomical and physiological considerations bearing on heterophoria W B LANCASTER South M J 923, xvi, 38
- Isolated paralysis of the inferior oblique S B MARLOW Arch Ophth 923 in, 30
- Abiotrophy ophthalmoplegia externa A W STELLINO Arch Ophth 93, in, 56
- Pemphigus of the conjunctiva G H HOOD Med J Australia, 923 n, 350 [285]
- Dermoid of the conjunctiva report of case C M MILLER South M J 93, xvi, 4
- Anaphylactic keratitis report of case S WALLER, J J Am M Ass 93 lxxx, 60
- The etiology of sympathetic ophthalmitis H H STARK Am J Ophth 923 vi, 49 [285]
- Metastatic thyroid tumor in the orbit A KRAPE Arch Ophth 923, in 68 [285]
- The use of the pupilloscope in neurology H O MERRILL and O BARREY California Stat J M 93 xxx, 1
- The action of miotic drugs on diseased intra-ocular structures R J CUNY Am J Ophth 923 vi, 49
- Some aspects of ocular tuberculosis A L WETTERMAN Proc Roy Soc Med, Lond 93 xvi, Sect Ophth
- Ocular syphilis J C DODDAS Med J Australia, 923, 19
- Calcareous degeneration of the eye, with deposits on the iris R BATTEN Proc Roy Soc Med Lond 923 xvi, Sect Ophth
- Notes on case of cataract in child following lightning stroke W V COOPER Med Press, 93 cxv, 5
- Factors influencing the choice of method for cataract extraction D SARRIS Arch Ophth 93 in, 3 [286]
- The etiology of optic atrophy W L TEMPLETON Brit M J 923, 1, 6
- The mass and halo of glaucoma R H ELLIOT Am J Ophth, 1923, vi, [286]
- Should I still consider the ocular tension as being due to the aqueous humor? The ocular tension after puncture of the anterior chamber or pressure on the eyeball A P MANNOR Arch Ophth 923 in, 3
- A glass glass retinoscope F A WILLIAMS NORTON Proc Roy Soc Med Lond, 93 xvi, Sect Ophth
- Ophthalmic operations A CHITCHEY Practitioner 923, cx, 5

- The open treatment in eye operations W B I POLLOCK Brit M J 923 5
- Fimbriated cartilage implants following enucleation W B DODDART Am J Ophth 923 vi, 9
- The nursing of eye cases L KINGHAM Trained Nurse & Hosp Rev 923 lvi, 39

## Ear

- Progress otology, rhinology and laryngology during 9 D AUSTIN A PALMER, and H HAYS Med Times, 93 li, 8
- A case of absolute bilateral deafness with almost complete loss of vestibular activity A RYLAND Proc Roy Soc Med Lond 93 xvi, Sect Otol 7
- Complete traumatic destruction of vestibular function with unusually slight concomitant cochlear involvement S O FIELDON Laryngoscope 93 xxxii, 6
- A case of tuberculosis of the right ear impaired hearing of the left ear and polyarthritis due to purulent arthritis G WOLF Laryngoscope, 923, xxxii
- Tinnitus associated with facial spasm G T JENKINS Proc Roy Soc Med, Lond 923, xvi, Sect Otol 8
- An attempt at mandibular tests for hearing S HARRISON and W S TUCKER Proc Roy Soc Med Lond 923, xvi, Sect Otol
- The improved artificial drum as an aid to hearing study of certain pemphyses involved P D KERRISON Laryngoscope, 923 xxxii, [286]
- Chronic suppurative otitis H M J Med J Australia, 923 li, 704
- Case of acute suppurative in one ear subjected to early operations on account of complete deafness of the opposite ear J DODDAS GRANT Proc Roy Soc Med Lond 93, xvi, Sect Otol 6
- Otitis media complicating operations on the gasserian ganglion H R LYONS J Am M Ass 923, lxxx, 76
- A septic type of temperature not referable to the ear in cases of acute suppurative otitis media H I LITTLE Ann Otol Rhinol & Laryngol 923, xxxi, 990 [287]
- Report of second case of plastic labyrinthitis with interesting findings W G SHERRILL J Am Inst Homoeop 923 xv, 603
- A temporal bone from case of tuberculous lateral sinus thrombosis and extracranial abscess E D D VIV Proc Roy Soc Med Lond 93, xvi, Sect Otol 5
- A method of demonstrating the surgical anatomy of the mastoid by models J W DOWNY J Ana Otol Rhinol & Laryngol 92, xxxi, 009
- Acute mastoiditis associated with acute septitis C M SAUTICK Med Press, 923, cxv, 94
- The radical mastoid operations E B BROOKS N breaks Stat M J 93 vii, 413
- Aseptic meningitis following operation for acute mastoiditis secondary operations, with recovery C C COTT Bull Buffalo Gen Hosp Buffalo, 923 4, 33

## SURGERY OF THE NOSE, THROAT AND MOUTH

## Nose

- Depressed fracture of nasal and associated bones H D GILLIES Proc Roy Soc Med Lond 93, xvi, Sect Laryngol 4

- A case of depressed bony bridge of nose H D GILLIES Proc Roy Soc Med Lond 923, xvi, Sect Laryngol 4
- A case of depressed fracture of the nasal arch H D GILLIES Proc Roy Soc Med Lond 923 xvi, Sect Laryngol 6

The Tumor treatment of the broken nose. D McKENZIE *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 3

Injury to the nose from left accident. W M MOLLISON *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 4

Complete rhinoplasty by cartilage transplant and pedicled temporal forehead flap. C A M WILLIAMS *Ann Surg* 93, lxxxv, 6

Some clinical observations on the correction of external deformities of the nose by the intranasal root. H B BLACKWELL *Laryngoscope*, 93, xxxii, [1923]

Nasal prostheses. VOLLMER *Deutsche Wochenschr f Zahnchir* 93, 2

The management of certain nose and throat disorders in singers and speakers. I W VOORHEES *Laryngoscope*, 93, xxxiii, 43

The intranasal injection of alcohol in the treatment of hyperplastic rhinitis and some of the nasal neoplasms. O J STREV *Ann Otol Rhinol & Laryngol* 93, xxxi, [1923]

Papilloma of the septum nasi. H L WRALE *Proc Roy Soc Med, Lond* 1923, xvi, Sect Laryngol

The indications and contraindications for the subnasal resections of the nasal septum. J N HOFFMANN *Laryngoscope*, 93, xxxiii, 2

Some points in the comparative anatomy of the nose and the accessory sinuses which account for the variations in these structures in man. J M INGRAM *Ann Otol Rhinol & Laryngol* 93, xxxi, 3

Paranasal sinuses of children, with special references to ocular symptoms. E W CARPENTIER *J South Carolina M Ass* 1923 xiv, 54

Observations upon the formation and function of the accessory nasal sinuses and the mastoid cells. A W PROBST *Ann Otol Rhinol & Laryngol* 1922, xxxi, 1063

The chronic antrum. T B JOSEPH *Lancet*, 93, cccv 78

Hyperplasia and infection in post-ethmoidal abscessed acular complications. O F HARRISON *Ann Otol Rhinol & Laryngol* 93, xxxi, 964

Surgery of the ethmoid labyrinth. A H AVONIA *Ann Otol Rhinol & Laryngol* 10, xxxi, 947

The nature and extent of surgical interference in acute nasal accessory cavity suppuration. J E BROWN *Ohio Stat M J*, 93 xix, 6

The pathological-anatomical difference between the febrile and the non febrile cases. A KERNSTROM *Ann Otol Rhinol & Laryngol* 92, xxxi, 950

Some further observations on the etiology and treatment of maxillary sinusitis. H V DETROW *Ohio Stat M J* 93 xix 8

Malabs in the puncture and irrigation of the maxillary sinus. W E GROVE *Ann Otol Rhinol & Laryngol*, [1923] 1923, xxxi, 93

Carcinoma of the antrum of Highmore. K S BLACKWELL *Surg Clin N Am* 93, 11445 [1923]

Abscess of the lung and the method of prevention in nasopharyngeal surgery. C W RICHMOND *Ann Otol Rhinol & Laryngol* 1923, xxxi, 960

### Throat

Throat, nose, and ear. J DUDMAN GRANT *Practitioner* 1923, cx,

The message of the diagnostic throat culture in diphtheria. J G M BUTLOW, R C HARRIS and H M LITCHFIELD *J Am M Ass* 93 lxxx, 240

A fatal case of Vincent's angina. D N HECK *Ann Otol Rhinol & Laryngol* 92, xxxi 30

The tonsils considered by general practitioner. G P OTDA *Med J Australia*, 934, 3

The tonsils as focus of systemic infection. K S BLACKWELL *Surg Clin N Am* 92 4, 1451

Electrical methods in the treatment of the tonsils. W D McFEE *Med Herald*, 92, xlv, 38

The present status of radiation treatment of the tonsils. C F MORTIMER *N York M J & Med Rec* 93 cxxx, 30

X-ray treatment of tonsillar and lymphoid tissue. J H THORNDYKE *Ann Otol Rhinol & Laryngol* 92, xxxi, 1044

Tonsillectomy in infancy and childhood. E M TAYLOR *Arch Pediatr* 93, xl 30

A self retaining palate retractor. O D WOLF *J Am M Ass* 92, lxxx, 01

Subcutaneous emphysema of the neck and chest following tonsillectomy in an epileptic, recovery. S ROSEN *Surg Ann Otol Rhinol & Laryngol* 10, xxxi, 1027

Lung abscess following tonsillectomy. F N HEMLOCK *Rhode Island M J*, 93 vi

Fatal infection following tonsillectomy. I H TURNER and A LAYTON *J Am M Ass* 92 lxxx, 20

Cysts of the bursa pharyngea. F A FINE *Laryngoscope*, 92, xxxiii, 37

### M Th

The progress of the mouth hygiene movement. W R WOODRUFF *Boston M & S J*, 93 cxxxviii

Erysipelas of the mouth. E TROTT *Brit M J* 1923, 94

The technique of oral radiography. C O STREY *Internat J Orthodont Oral Surg & Radiography* 93 1, 98

Dental responsibility of correct oral diagnosis. B L BAY *Dental Cosmos*, 103, lxxv 3

Some physiological principles in orthodontia. M H FISHER *Internat J Orthodont Oral Surg & Radiography*, 93, lxx, 16

The chemical, pathological and radiological aspects of infection of the teeth and gums. W WILCOX *Brit M J* 933 4, 53

A contribution to our knowledge of pyorrhea from the standpoint of histopathology. W H HAYWOOD, C O PERRY, C WESTER and F V SCHWARTZ *Dental Cosmos*, 93, lxx

Multiple calculi in Stensen duct report of an unusual case. A H ROBERTS *J Am M Ass* 93 lxxx, 5

A submaxillary gland containing large salivary calculi. D McKENZIE *Proc Roy Soc Med Lond* 93, xvi, Sect Laryngol 7

A case of Ludwig's angina. D H LEVY *N York M J & Med Rec* 93, cxxx 40

A case of epiglottitis of the right half of the fauces treated by diathermy. J DUDMAN GRANT *Proc Roy Soc Med Lond*, 92 xvi, Sect Laryngol 8

Tuberculous affections of the tongue. R M HARRISON-JONES *Lancet*, 93 cccv 8

A case of ulceration of the palate and fauces. W H KELSO and W H THORNDYKE *Proc Roy Soc Med Lond*, 92, xvi, Sect Laryngol 3

Orthodontic treatment of cleft palate. H E KELLEY *Dental Cosmos* 93, lxx

Submaxillary lipoma in the glacio-sphenoic fossa. T B LAYTON *Proc Roy Soc Med Lond* 93 xvi, Sect Laryngol

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## CONTENTS

I Authors	ii
II Index of Abstracts of Current Literature	iii
III Editor's Comment	ix
IV Abstracts of Current Literature	407-494
V Bibliography of Current Literature	495-515
VI Volume Index	i-xxiv

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## AUTHORS

OF THE ORIGINAL CONTRIBUTIONS WHICH ARE ABSTRACTED IN THIS NUMBER

- Abel, I 45  
 Aberg, F 487  
 Aery, L B 47  
 Ashley, A D 443  
 Aschroft, G 488  
 Atkinson, G 44  
 Babcock, J W 40  
 Bacon, D K 4  
 Bakker, C 480  
 Baiderry, F C 44  
 Ball, W G 476  
 Barney, J D 476 478 483  
 Benedict, F G 4 4  
 Berry, G 49  
 Bernick, R 45  
 Bircher, E 44  
 Blah, M E 409  
 Bloodgood, J C 430  
 Bolle, H 43  
 Bonney, V 453  
 Boyd, J 49  
 Boyd, G L 435  
 Brewer, G F 4  
 Brewster, M P 43  
 Betts, J W 405  
 Caldwell, C L 440  
 Callaway, D 454  
 Canessa, U 480  
 Cassman, M 490 44  
 Cassin, A 451  
 Chausberka, A B 486  
 Chetwood, C H 470  
 Christopher, F 448  
 Chown, S 430  
 Clark, A J 458  
 Collins, A W 455  
 Colston, J A C 453  
 Crawford, R H 477  
 Cresslow, J L 48  
 Crile, G W 414  
 Cunningham, R L 477  
 Curtis, A H 487  
 Currey, L 4 8  
 Dalman, H 4 5 490  
 Darling, B C 493  
 Davidson, H J 470  
 De la, L E 4  
 Deutchenlander, C 443  
 Dwyer, K 450  
 Eggers, C 4 6  
 Emborn, M 430  
 Epstein, G 446  
 Faer, J F S 4 484  
 Fay, F A 40  
 Flauster, H 417  
 Floerchen, H 4 5  
 Foot, V C 412  
 Franklin, M 413  
 Fullerton, A 474  
 Gerlach, W 438  
 Giles, A E 403  
 Goldstone, G R 443  
 Glass, E 490  
 Goss, O 4 9  
 Goldschmidt, W 436  
 Good, F L 478  
 Gordon, G A 404  
 Grant, F C 44  
 Graves, S 4  
 Greenhill, J P 473  
 Griffiths, H F 43  
 Guthrie, C G 451  
 Guy, E F 435  
 Haas, 430  
 Haas, W 430  
 Heckelroth, M 446  
 Haines, E F 453  
 Halberstadt, L 450  
 Hall, G D 400  
 Halstead, A T 445  
 Hammer, H 474  
 Harde, L L 414  
 Harvey, S C 4  
 Hauser, G 419  
 Hawks, E M 47  
 Hawthorne, C O 4  
 Haynes, L R 478  
 Heald, J 440  
 Herbut, R H 480  
 Herman, L 478  
 Hensen, F 476  
 Hinton, A 418  
 Hoffmann, V 447  
 Hoffman, E F 414  
 Hoan, M R 487  
 Huck, J G 413  
 Huebner, F 478  
 Huener, O L 470  
 Icke, G 444  
 Jackson, C 419  
 Jones, J H 42  
 Judd, E S 4 3  
 Jungblut, C W 43  
 Juras, A 403  
 Kasperow, O I 477  
 Kappes, M 418  
 Karsch, C 436  
 Kreyer, L D 454  
 Krid, F 48  
 Kunderwagh, J B 430  
 Kuesper, P 45  
 Krums, W 45  
 Kretschmer, H L 477  
 Krums, I 40  
 Kuba, C F 49  
 Kuehn, A 415  
 Landolt, E 457  
 Lase, F J 45  
 Lechner, E P 448  
 Lehnbecker, A 451  
 Lemper, F 445  
 Lén, A 447  
 Lipo, S 4 6  
 Lipkowitz, J B 480  
 Lörner, A 443  
 Lombert, S 4  
 Lox, R H 478  
 Marked, N W 407  
 Maxmowitz, B 4 4  
 McConno, G 45  
 Melchner, L 407  
 Merion, O C 406  
 Meyer, L 490  
 Mober, R H 455  
 Muls, R W 430  
 Mörner, W J 416  
 Mophaudia, A 4  
 Morton, C A 4 7  
 Morton, R 457  
 Moyakha, B 423  
 Mueler, V 455  
 Mueser, A D 45  
 Munsey, R D 470  
 Natanson, L N 480  
 New, G B 4  
 Nicolayson, N 4 454  
 Osborne, E D 414  
 Ostermeyer, K 410  
 Oudendal, A J F 450  
 Palogy, J 490  
 Park, E A 436  
 Paul, N 43  
 Pfeiffer, D B 44  
 Pickard, R 487  
 Ponsopp, L 448  
 Quinn, L P 428  
 Rabin, H 446  
 Ranshoff, J L 434  
 Reckers, J J 440  
 Reichen, M L 430  
 Richards, T K 47  
 Rivers, A B 444  
 Rowell, H O 407  
 Rowntree, L G 484  
 Rudolf, A 423  
 Sadler, J E 4 7  
 Sanaby, J M 454  
 Sante, L R 435  
 Satta, F 438  
 Sayed, W 4 4  
 Schlittler, E 400  
 Scholl, A J 484  
 Schulz, O E 445 430  
 Schwarz, E 444  
 Seure, N P 474  
 Sellhorn, H 468  
 Shadden, W V 453  
 Silcock, W M 433  
 Spierston, D M 454  
 Slavens, J H 450  
 Smeets, R 430  
 Small, W B 476  
 Smith, S M 456  
 Stevens, W E 478  
 Sutherland, C G 414  
 T. for W J 450  
 Tenckhoff, B 407 46  
 Tenant, C E 48  
 Thompson, A 480  
 Tuck, H 455  
 Troner, J H 40  
 Turner, H 447  
 Tyler, W 453  
 Underhill, F P 453  
 Volkmann, J 438  
 Von Albertin, A 408  
 Von Balogh, E 450  
 Von Stabenmark, 433  
 Waldman, E 473  
 Watson, E M 477  
 Webster, J H D 490  
 Weil, S 44  
 Weiss, E 4 63  
 Weiss, W E 409  
 Wewers, 473  
 Whitman, L B 486  
 Wiesmann, O 408  
 Willems, 458  
 Wills, H 458  
 Wiltberger, O O 430  
 Wolf, G 43  
 Wroden, R 44

# CONTENTS—JUNE, 1923

## ABSTRACTS OF CURRENT LITERATURE

### GENERAL SURGERY

#### SURGICAL TECHNIQUE

##### Operative Surgery and Technique

- TEVICHNEY, B. Hypertonic Glucose Solutions as Prophylactic Against Injurious Effects of Operation and Anesthesia 407
- MELCHER, E. The Physiology of Wounds 407
- TEVICHNEY, B. Vagotomization of the Uterus and Its Complications. *Review* 40
- BOYER, V. The Modern Scope and Technique of Mysectomy 403
- HUNTER, F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter 478
- CAMERO, U. The Treatment of Ectrophy of the Bladder 480
- KERRY, C. F. Torsionectomy and Its Complications 49

##### Aseptic and Antiseptic Surgery

- HOWELL, H. O. The Surgical Importance of Iodine Iodocyanury and Poisoning 407

##### Anesthesia

- WHELAN, O. Clinical Investigations on the Behavior of the Blood Pressure and the Pulse During and After Novocaine Adrenalin Anesthesia 408

##### Surgical Instruments and Apparatus

- RICHIE, ALAN, J. J. A Thoracic Abdominal Gate 409

#### SURGERY OF THE HEAD AND NECK

##### Head

- BLANK, M. E. Fracture of the Skull and Its Complications 409
- GEYER, S. Fracture of the Skull Base with Supratentorial Hemorrhage on the Opposite Side. Report of an Interesting Case 4
- ALAN, W. Y. and HARVEY, S. C. The Regeneration of the Meninges 4
- HAWKINS, C. O. Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children 4
- MOOREHEAD, W. The Parasitology and Pathological Anatomy of Brain Cysticercosis 4
- LEWIS, S. C. Increased Cerebral Pressure with Fat Embolism 4
- FELT, T. and GRANT, F. C. Ventriculography and Intraventricular Photography in Internal Hydrocephalus 4
- DAVIS, L. E. Lesions of the Parasympathetic Arteries 4

- BRUNER, G. E. Carcinoma of the Cheek and Lip. General Principles Involved in Operations and Summary of the Results Obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York 4

- EMERY, J. F. S. Rotation of the Cheek 4
- JONES, E. S. and NEW, G. B. Carcinoma of the Tongue. General Principles Involved in Operations and Summary of the Results Obtained at the Mayo Clinic 4 3
- CRILE, G. W. Carcinoma of the Jaws, Tongue, Cheek, and Lip. General Principles Involved in Operations and Summary of the Results Obtained at the Cleveland Clinic 4 4
- EMERY, J. F. S. and ACHESON, G. The Operative Correction of Ear Defects by Fritheal Inlays 489

##### Neck

- MAXIMOFF, B. Tumors of the Parathyroid Gland 4 4
- BENNETT, F. G. The Basal Metabolism of Young Girls 4 4
- HOLM, E. F. Hypoglycemia in Esophthalmic Goiter. A Preliminary Report 4 4
- FURCHBERG, H. The Method and Technique of Operation for Goiter 4 5
- DARMANN, H. An Unusual Case of Carcinoma of the Larynx. Predicted Carcinoma of the Larynx 4

#### SURGERY OF THE CHEST

##### Chest Wall and Breast

- LEVIN, S. Post Typhus Fatigue of the Ribs 416
- ROBERTS, C. Chronic Empyema 4 6
- SADLER, J. E. A Study of the Cases of Carcinoma of the Breast Operated upon by Wyss and the End Results Obtained in Them 4 7
- MORTON, C. A. Malignant Diseases of the Breast With Special Reference to the Supraclavicular Extension of the Operation 4 7
- CRILE, G. W. Local Recurrence Following Extirpation of Carcinoma of the Breast 4 8
- HINDE, A. Recurrences of Carcinoma of the Breast Which Developed After Clinical Cure Lasting Five Years or Longer Following Treatment with the Roentgen Ray 4 8
- Trachea and Lungs
- JACKSON, C. Bronchoscopic Clinic. Lung Suppuration Caused by the Prolonged Sojourn of Foreign Body 419

- HABER, G. Pneumothorax  
 GORTER, O. The Radical Phrenocotomy as an Independent Therapeutic Measure in Unilateral Pulmonary Phthisis  
 OSTERMANN, K. The Mobilization of the Latissimus Shoulder Girdle as an Aid in Thoracoplasty for Pulmonary Tuberculosis  
 DUGAN, K. and SEAYLER, J. H. Scarlatina and Lung Infections

### Pharynx and Esophagus

- MILLS, R. W. and KIRKWOOD, J. B. Further Observations on the Radical Treatment of Cancer of the Esophagus, with Review of Forty-Four Cases So Treated

### Miscellaneous

- BALDWIN, F. C. An Experimental Study of the Cause and Effects of Immobility of the Diaphragm

## SURGERY OF THE ABDOMEN

### Abdominal Wall and Peritoneum

- WOLFF, G. The Pathogenesis of Torsion of the Ovarian  
 BARRY, D. K. Leverside in the Treatment of Peritonitis  
 JUNKER, C. W. The Bactericidal and the Inhibitory Power of Ether. A Contribution to the Study of the Ether Treatment of Peritonitis  
 JONES, J. H., and FLETCHER, D. B. Ochsner Treatment in Peritonitis

### Gastro-Intestinal Tract

- RUDOLF, A. Experiences in the Surgical Treatment of Gastroptosis  
 MORTON, B. Some Problems of Gastric and Duodenal Ulcer  
 HART, L. L. and RIVERS, A. B. Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer  
 GUY, E. F. The Effect of Gastro-Enterostomy on Gastric Function as Interpreted by the Fractional Test Meal  
 COLLEMAN, W. So-Called Laminectomy  
 PALCAY, J. Roentgenological Investigations on the Functional Behavior of the Stomach in the Various Types of Posterior Reticulo-Gastro-Enterostomy and Comparison of Its Value in Ulcer of the Stomach and Duodenum  
 FRUTKIN, H. Operations on the Stomach (Resections) in Advanced Age  
 BORN, G. L. The Etiology of Acute Intestinal Intussusception in Infants  
 GERLACH, W. Mechanical Injuries to the Mesos caused by Ascendens in Intestinal Obstruction Due to Ascendens  
 QUAY, E. P. Pathogenic Process of the Right Colon  
 WITTEMBERG, O. O. The Indications For, and the Results of, Anchoring the Head of the Colon

- EXTON, M. Chronic Ulcerative Colitis and Its Treatment  
 LEWIS, Gail-Bladder, Pancreas, and Spleen  
 HAAS, W. The Bacterial Content of the Blood of the Portal Vein and the Origin of Liver Abscesses  
 REXFORD, M. E. Gall Bladder Disease  
 GRISTY, H. E. The Relation of Disease of the Gall Bladder to the Secretory Function of the Stomach and Pancreas  
 BOLLE, H. A Case of Idiopathic Cyst of the Common Bile Duct  
 BRYAN, M. P. The Importance of Insect Roaches Findings in Chronic Infection of the Biliary Ducts and Gall Bladder  
 ARNOLD, I. Surgical Treatment of Diseases of the Gall Bladder  
 FREEDMAN, M. An Unusual Case of Spontaneous Rupture of the Spleen Cured by Splenectomy  
 VON STERNBERG, Surgery of the Spleen. Ligature of the Splenic Artery  
 FOOT, N. C. Studies on Endothelial Reactions Changes in the Distribution of Colloidal Carbon Noted in the Lungs of Rabbits Following Splenectomy

### Miscellaneous

- SELLECK, W. M. Penetrating Wounds of the Abdomen  
 RANNEY, J. L. The Diagnosis of Obscure Chronic Abdominal Conditions  
 LUTY, A. Segmental Localization of Pain Through Paravertebral Neurotome Injections as Differential Diagnostic Method in Intra-Abdominal Disease  
 VANCE, L. R. Pneumoperitoneum as an Aid in the Diagnosis of Subdiaphragmatic Conditions  
 COLE, A. Retroperitoneal Cysts  
 COLLINS, A. W. Malignant Tumors of the Abdomen

## SURGERY OF THE EXTREMITIES

### Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- FAIR, E. A. Certain Factors Causing the Deposition of Lime Salts in Bone  
 BLOODGOOD, J. C. Bone Tumors Sarcoma Periosteal Group Schwannoma Type, Osteogenic, Methods of Diagnosis and Treatment  
 KATZMAN, C. Synovitis of the Large Joints of the Extremities  
 VOLKMAR, J. So-Called Crepitation of the Scapula  
 KAPPA, M. Sweeping Shoulder and Voluntary Dislocation of the Shoulder  
 SATTA, F. Operative Treatment of Supracondylar Fracture of the Humerus in Children  
 GIACCA, S. A Contribution to the Study of Rigidity of the Hand  
 CARPENT, M. Costal Phlegm and Tuberculous Osteitis of the Neck of the Femur  
 HAAS, Angioplasty of the Carpus of the Knee Joint

- HELLSTROM, J. So-Called Osteochondritis Dissecans of the Knee Joint 440
- BURDET, E. A Contribution to the Pathology (Arthritis Deformans) and Diagnosis (Arthro-Endoscopy) of Metatarsal Injuries 44
- CANTILLI, M. A Rare Case of Hereditary Symmetrical Osteitis of the Lower Limbs 44
- WEL, S. Functional Testing of the Lower Extremities with the Aid of T-Spring Balances 44
- AMATEY, C. The Etiology of Koehler's Disease of the Head of the Metatarsal Bone 44

## Fractures and Dislocations

- LORENA, A. A New Method of Treating Irreducible Acquired or Congenital Hip Dislocations 443
- AMELY, D. A. The Lorenz Bifurcation Operation 443
- DEUTSCHLENDER, C. The Treatment of Old Congenital Hip Dislocations 443

## Surgery of the Bones, Joints, Muscles, Tendons, Etc.

- GARDINER, G. R. Some Points in Reconstructive Surgery 443
- SCHEWAL, E. The Anatomical Processes in the Regeneration of Tendons and in the Plastic Repair of Tendon Defects by Tendon, Fascia, and Connective Tissue. An Experimental Study 444
- MAER, G. The Flaming of Bone Cavities with Free Transplants of Fat 444
- LEONARD, F. A Method of Facilitating Plastic Operations on the Deltoid Muscle 445
- SCHULZ, O. E. New Arthroplasty of the Shoulder 445
- WILDER, R. Partial Endosteal Resection in the Treatment of Spastic Contractures of the Hand in Infantile Hemiplegia 445
- RAVE, H. The Moravian Plastic for Contractures of the Fingers 446
- SCHULZ, O. E. Peri Articular Fixation of the Knee Joint 446
- EWING, G. The Question of Operative Procedures for Deformities of the Feet 446

## SURGERY OF SPINAL COLUMN AND CORD

- HACKENBROCK, M. Congenital Curvature of the Spine as an Intra Uterine Deformity of Weight Bearing 446
- METTER, W. J. Fracture of the Spine with Cord Involvement 446
- TORNER, H. An Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection 447
- HOFMANN, V. A Propagating Operation on the Vertebral Column. Thoughts on the Operative Treatment of Spondylitis 447
- LEHR, A. On Lumbar Arthritis 447

## SURGERY OF THE NERVOUS SYSTEM

- FUTCHER, L. Transplantation of Spinal Nerve Roots as Flaccid Paralysis 448
- LEHR, E. P. Peri Arterial Sympathectomy 448
- HARTSHORN, A. E. and CHRISTOPHER, I. Peri Arterial Sympathectomy 448

- CALLANDER, C. L. Arterial Decortication 449
- TYLER, W. J. The Surgical Treatment of Chronic Scabies 450
- SOMMER, R. Carcinous Angiomas in the Peripheral Nervous System 450
- MARSHALL, N. W. Bilateral Resection of the Pododermic Nerves for Vulval Pruritus 457

## MISCELLANEOUS

- Clinical Entities—General Physiological Conditions
- GLASS, E. Tissue Necrosis Due to an Ink Pencil 450
- VON BALOGH, E. A Contribution to Our Knowledge of Nose 450
- PILL, N. Observations on the Origin, Causation, and Treatment of Rodent Ulcer 45
- MCCONNELL, G. A Case of Multiple Myxoma 45
- BENNETT, R. The Function of Connective Tissue in the Experimental Production of Cancer 45
- LANG, F. J. and KRAUSE, W. Cystic Osteoplastic Carcinoma as Compared with the Scirrhus Form 45
- KLEMPERER, P. Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis 45
- BRYAN, J. W. Chronic Endocervicitis and Its Treatment 465
- HOOD, M. R. Fibromas of the Ovary 467
- CUTLER, A. H. The Diagnosis and Relief of Sterility 467
- VON ALBRECHT, A. The Association of Different Maligant Tumors and Tuberculous in the Same Organ 468
- FULLERTON, A. Voles and Pains of Renal Origin 474
- KRISTOFER, H. L. Echinococcus Disease of the Kidney 477
- KETTER, L. D. The Mechanism of the Formation of Urinary Calculi 484
- Blood
- GUTHRIE, C. G. and HOCK, J. C. On the Existence of More Than Four Isoagglutinin Groups in Human Blood 453
- TYLER, M. and UNDERHILL, F. P. Does Menstruation Influence Blood Concentration 453
- LEONTOPOULOS, A. The Theoretical Basis and Practical Application of Blood Pressure Estimations in Surgical Operations 453
- NEUBAUER, N. A. The Transfusion of Blood in Acute Posthemorrhagic Anemia 454
- SPIEGEL, D. M. and SANBURY, J. M. Intra peritoneal Transfusion with Citrated Blood. An Experimental Study 454
- KROER, I. Uterine Secretion. An Experimental Investigation into Its Effect upon Coagulation of the Blood 46

## Blood and Lymph Vessels

- CALZA ARA, D. Wounds of the Common Carotid 454
- TICHA, H. A Case of Arteriovenous Anastomosis of the Subclavian Artery with Reversal of the Circulation of the Arm. A Contribution to the Functional Transformation of Blood Vessels 455



MILLER, W. The Treatment of Defects of the Walls of Blood Vessels by the Application of Rubber Protective Coverings	455	HALPERN ANDER L. Roentgen Carcinoma	459
General Bacterial Infections		WEBSTER, J. H. D. The Clinical Results of the Treatment of Malignant Disease by the X Rays	459
MILLER, R. H. Tetanus. A Report of 16 Cases in the Massachusetts General Hospital	455	WYNN, F. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type	463
Surgical Diagnosis, Pathology and Therapeutics		HALL, O. D. The Use of Radium in Treatment of Cancer of the Cervix	466
CLARK, A. J. The Scientific Basis for New Specific Protein Therapy	456	SEARS, N. P. A New Method of Making Ureteropyelograms	474
Experimental Surgery and Surgical Anatomy		OSBORNE, E. D. S. TRY LA, C. G. SCHOLL, A. J., and ROBERTS, I. G. Roentgenography of the Urinary Tract During the Erection of the Penis in the Male	474
WILLIAMS. The Histologic Processes Occurring in Skin Implanted by the Bristle Method	456	THURMAN, J. H. A. R. Treatment of Tonsillar and Lymphoid Tissue	46
Röntgenology and Radium Therapy		BARKER, J. W. Observations on the Results of Roentgen Therapy in Chronic Tonsillitis	48
MORTON, R. Deep X Ray Therapy	457	Legal Medicine	
WHITE, H. I. James from Roentgen Rays in Deep Therapy	45	Responsibility for Payment of Physician in Accident Case	46

## GYNECOLOGY

Uterus		H. VINEY, L. W. Acute Carcinate Inversion of the Uterus	47
ABRAHAM, I. Uterine Secretion. An Experimental Investigation into Its Effect upon the Coagulation of the Blood	46	Adnexal and Peri-Uterine Cystocele	
TRYKOWSKI, B. Antiradiation of the Uterus and Its Complications. Discussion	46	HORN, M. R. Fibromatosis of the Ovary	467
WELSH, F. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type	463	External Genitalia	
GILES, A. E. The Indications For and the Results of Myomectomy	463	MASON, Y. W. Bilateral Reversion of the Pudendal Nerves for Vaginal Prolapse	467
BOVNET, V. The Blacker Scope and Technique of Myomectomy	463	Miscellaneous	
GRIMON, O. L. The Treatment of Hydrometra and Chorioepithelioma, with Consideration of the Relation of Frequency of Back	464	TURNER, M. and UNDERHILL, F. P. Does Venetresion Influence Blood Concentration?	453
BLUM, J. W. Chronic Endocervicitis and Its Treatment	465	CURTIS, A. H. The Diagnosis and Relief of Sterility	467
MELSON, O. C. The Diagnosis of Cancer of the Uterus	466	VON MERTENS, A. The Association of Different Malignant Tumors and Teratomas in the Same Organ	468
HALL, O. D. The Use of Radium in Treatment of Cancer of the Cervix	466	ELLERMAN, H. An Explanation of the Vocal Tumor of Internal Organs and the Tumor of the Cervix and Knotting of the Umbilical Cord	468

## OBSTETRICS

Pregnancy and Its Complications		Labor and Its Complications	
WALL, W. F. True Eclampsia and Renal Eclampsia	469	H. VINEY, L. W. Acute Complete Inversion of the Uterus	47
D. VIDON, H. J. A New Procedure in the Treatment of Eclampsia	470	WALSH, F. The Chemical Changes in the Blood under Local Anesthesia with Temporary Fixation of the Uterus	471
MCMURRY, R. D. Uterine Fibromyosarcoma Complicating Pregnancy	470	Newborn	
ALLEY, L. B. The Cause of Tubal Pregnancy and Tubal Twisting	47	GREENWELL, J. P. The Association of Fetal Abnormalities and Deformities with Placenta Previa	473
HARRIS, E. M. Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy	47	WATKINS, J. Experimental Infusion	473
GOOD, F. L. and RICHARDS, T. K. Ovarian Pregnancy	47		

## GENITO URINARY SURGERY

- Adrenal, Kidney and Ureter**
- WILL, W. F. True Falciparum and Renal Echinococcus 469
- HANKS, H. A Case of Bilateral Subacute Suppurative Pneumococcal Paraneoplasia 474
- SEARS, N. P. A New Method of Blending Uretero pyelograms 474
- FILLISTON, A. Aches and Pains of Renal Origin 474
- MAYER, R. H. The Use of Creatinine as a Test of Renal Function 476
- BARNES, J. D. Gonococcal Infection of the Kidney 476
- BALL, W. G. Some Cystoscopic Appearances in Tuberculosis of the Urinary Tract 476
- CARTWOOD, C. H. The Treatment of Pyelitis 476
- HIRM, F. Experimental Hydronephrosis: The Significance of Compensatory Hypertrophy and Dense Atrophy to Repair 476
- WATSON, E. M. Spontaneous Healing in Destructive Pyonephrosis: Report of Two Cases 477
- LANDWEHR, O. F. A Hitherto Unrecognized Mode of Origin of Congenital Renal Cysts 477
- CLAWFORD, R. H. Polycystic Kidney 477
- WERTSCHER, H. L. Echinococcus Disease of the Kidney 477
- CORNING, R. E. Leucoplakia of the Renal Pelvis 477
- STEVENS, W. E. The Diagnosis and Treatment of Malignant Tumors of the Kidney 478
- HUTCHES, F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter 478
- HERRICK, L. Accidental Bilateral Occlusion of the Ureters 478
- BARNES, J. D. Observations on the Hooks of the Ureter 479
- HUTCHES, F. L. Conversion in Renal Surgery Associated with Ureteral Structure Work 479
- HUTCHES, R. H., and THOMPSON, A. Acquired Structure of the Male Ureter 480
- Bladder, Uterus, and Penis**
- CAMERA, U. The Treatment of Ectrophy of the Bladder 480
- GERMAN, W. J. L. A Review of 53 Cases of Bladder Stone Removed by Lithotomy 481
- KIDD, F. The Treatment of Epithelial Tumors of the Urinary Bladder 481
- MILLER, A. D. F. Irrigation in the Treatment of Affections of the Lower Genito Urinary Tract 481
- CLETON, J. A. C. An Unusual Case of Traumatic Urethral Stricture 483
- Genital Organs**
- BARNES, J. D. HARRIS, E. F. and SHEDDEN, W. M. Some Results of Prostatectomy 483
- Miscellaneous**
- OSBORN, E. D., SUTHERLAND, C. G., SCHOLL, A. J., and ROYCE, L. G. Roentgenography of the Urinary Tract During the Excretion of Sodium Iodide 484
- KATZ, L. D. The Mechanism of the Formation of Urinary Calculi 484
- TRIN, C. F. Cystic Calculi: A Complex Surgical Problem: Report of Cases of Multiple Cystic Calculi 485

## SURGERY OF THE EYE AND EAR

- Eye**
- WRIGHT, L. B. Pulsating Exophthalmos 486
- SMITH, W. B. An Experience with Some Cases of Foreign Body in the Eyeball 486
- CHANDLER, W. B. The Lachrymal Operation of the Lachrymal Sac 486
- ALLPORT, F. Industrial Eye Injuries 487
- LAVOIE, E. A Study on Strabismus 487
- PICKARD, R. A Method of Recording Dark Alterations and Study of the Growth of Normal and Abnormal Dark Cups 487
- Ear**
- SMITH, S. M. Acute Aural Diseases in Children 488
- EMER, J. F. S. and AUGNIGHT, G. The Operative Correction of Ear Defects by Epithelial Layers 488

## SURGERY OF THE NOSE THROAT AND MOUTH

- Nose**
- WATSON, L. K. and LEVINSKY, I. B. Perforation of the Nasal Septum in Cocaine Smokers 489
- BARNES, C. and OTTENDAL, A. J. F. A Rare Chondroma of the Nose 489
- DOUGLAS, K., and BEATLEY, J. H. Sinus Disease and Lung Infections 489
- DANIELS, H. Osteoma of the Accessory Nasal Sinus: A New Contribution and Critical Collection: Review 490
- MAYER, M. Carcinoma of the Ethmoid Bone: With New Contributions on Ossification in Tumors 490
- SCHLEIFER, E. How may the So-Called Senose Accidents in the Irrigation of the Antrum of Highmore Be Averted? 490
- Throat**
- DANIELS, H. An Unusual Case of Carcinoma of the Larynx: Predicted Carcinoma of the Larynx 491
- TRINER, J. H. X-Ray Treatment of Tonsillar and Lymphoid Tissue 491

BORD, E. Observations on Some Throat Conditions in Children	40	Summary of the Results Obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York	4
BARKOCK, J. W. Observations on the Results of Roentgen Therapy in Chronic Tonsillitis	40	JONES, F. S. and N. W. G. B. Carcinoma of the Tongue: General Principles Involved in Operations and Summary of the Results Obtained at the M. Clinic	413
KLUM, C. F. Tonsillectomy and Its Complications	40	CRILE, G. W. Carcinoma of the Jaw, Tongue, Cheeks and Lips: General Principles Involved in Operations and Summary of the Results Obtained at the Cleveland Clinic	411
FOX, F. A. Cysts of the Bara Pharynx	40	V. BARKOCK, F. A Contribution to Our Knowledge of Meas	430
REX, G. War Surgery of the Larynx, with Special Reference to the Work at Cape May	40	DARTON, B. C. Can the Medical and Dental Professions Agree on any Standardized Treatment of the Issues of Infection	403
J. ASH, A. Subcutaneous Avulsion with Oblique Tension of the Larynx After Burn	403		

## Mouth

RE, G. I. Carcinoma of the Cheeks and Lips: General Principles Involved in Operations and	
---	--

## BIBLIOGRAPHY

## GENERAL SURGERY

<b>SURGICAL TECHNIQUE</b>		Blood	377
Operative Surgery and Technique	405	Blood and Lymph Vessels	377
Aseptic and Antiseptic Surgery	405	General Bacterial Infections	308
Anesthesia	405	Surgical Diagnosis Pathology and Therapeutics	308
Surgical Instruments and Apparatus	405	Experimental Surgery and Vascular Anatomy	308
		Radiology and X-ray Therapy	308
		Industrial Surgery	308
		Hospital Medical Education and History	308
		Legal Medicine	309
<b>SURGERY OF THE HEAD</b>			
Head	403	<b>GYNECOLOGY</b>	
Neck	407	Uterus	309
<b>SURGERY OF THE CHEST</b>		Adnexal and Peri Uterine Conditions	309
Chest Wall and Breast	407	Internal Genitalia	309
Trachea and Lungs	407	Mesothelioma	310
Heart and Vascular System	407		
Pharynx and Esophagus	407	<b>OBSTETRICS</b>	
Mesothelioma	408	Pregnancy and Its Complications	310
<b>SURGERY OF THE ABDOMEN</b>		Labor and Its Complications	3
Abdominal Wall and Peritoneum	403	Parturition and Its Complications	3
Gastro-Intestinal Tract	409	Newborn	3
Liver Gall Bladder Pancreas and Spleen	30	Miscellaneous	31
Miscellaneous	301		
<b>SURGERY OF THE EXTREMITIES</b>		<b>GENITO-URINARY SURGERY</b>	
Conditions of the Bony Joints, Muscles, Tendons, Ligaments, etc.	303	Adrenal Glands and Ureter	3
Fractures and Dislocations	303	Bladder, Uterus, and Penis	31
Surgery of the Bones, Joints, Muscles, Tendons, Ligaments, etc.	304	Genital Organs	3
Orthopedics in General	305	Miscellaneous	31
<b>SURGERY OF THE SPINAL CORD AND COELOM</b>		<b>SURGERY OF THE EYE AND EAR</b>	
Spinal Cord	305	Eye	31
Coelom	306	Ear	31
<b>SURGERY OF THE NERVOUS SYSTEM</b>		<b>SURGERY OF THE NOSE, THROAT AND MOUTH</b>	
Miscellaneous		Nose	31
Chemical Factors—General Physiological Conditions	306	Throat	31
Scars, Vaccines, and Ferments	307	Mouth	31

## EDITOR'S COMMENT

**A**N index, ordinarily is a prosaic thing a necessary evil which from the standpoint of readability and interest is classed with statistical tables government reports and the dictionary. To the editors of the **ABSTRACT** the index means something much more. It represents in the first place, a studied effort to classify and group the abstracts of the preceding six months in such a form as to make them readily available for the busy surgeon. No one who has attempted a similar task will question the amount of time, patience, and painstaking effort required to prepare a satisfactory index of so many and varied subjects. Many surgeons read extensively few have a sufficiently retentive memory to say six months later where that interesting article on the repair of facial defects appeared, or who described so accurately the technique of the operation he wishes to perform on the morrow. A well prepared index of the best current literature promptly answers these questions. Simplicity, clearness, comprehensiveness, then, are our first concern in compiling the index.

It serves a second purpose, of primary importance to the editors but ultimately of still greater significance for the reader. It is the constant aim of the **INTERNATIONAL ABSTRACT** to present to its readers a concise account of what is going on in the minds and clinics and laboratories of the world's leading surgeons. That is an ideal worthy of the best effort we can command. Many a man, as he reads his journals, shrugs his shoulders and says, "Same old stuff." Sometimes his criticism is justified but every month, from some laboratory in France, some clinic in England, some hospital in Germany, Italy, or Spain, from Canada or South America, from California or Connecticut or Colorado come contributions of interest, of importance, perhaps of far reaching significance, to the practitioner of surgery. Have we succeeded in recognizing them, and in pointing them out to our readers with the emphasis they deserve. The answer is in the index. It comprises the audit of our six months work, the measure of our success in presenting to our readers the means of keeping abreast of surgical progress.

We have taken at random from the index which appears in this number four important heads to illustrate how the subjects in question are covered

in a single volume of the **ABSTRACT** Breast Nerves Pregnancy Uterus

Breast, End results of operations for cancer of, 3, 4, 7, tuberculous of, 3, tumors of, 80, 200, influence of placenta on, 3, bleeding of, 66 effect of radiation, 11th regard to postoperative recurrence of carcinoma of, 67 treatment of recurrent inoperable carcinoma of, by radium and roentgen ray, 67 fibro-adenoma of, in male, pregnancy after operation for cancer of, 57, freedom from local recurrence following chemical removal of advanced carcinoma, 500 results and technique in treatment of carcinoma of, by radiation, 30 tumors of arising during pregnancy and lactation, 368 supraclavicular extension of operation for malignant disease of, 417 local recurrence following extirpation of carcinoma of, 4, 8 clinical cure of recurrence of carcinoma of, lasting more than five years after treatment, 11th roentgen ray, 4, 8

Nerves Methods for bridging defects in, and new method of suture-plant, 3 technique and results of resection of, of stomach, 3 injuries of peripheral, associated with fractures, 3 experimental results of cable grafts and tubes of fascia lata in repair of peripheral, 34 solitary fibrosarcoma of trunk of peripheral, 3 gahanic extirpation of motor following parenteral injection of heterogenous serum, 66 anatomy and surgical bearing of in abdominal, 11, 30 backward luxation of seventh cervical vertebra, 11th related compression of roots of, 77 electrical method in diagnosis and prognosis of paralysis due to lesions of peripheral, 80 resections of peripheral, 8 technique of suture of 11th surgery of sympathetic, 150 injuries of, of arm, 150 resection of roots of spinal, 150 topography of of brachial plexus and axillary vessels at entrance into subclavicular space, 358 transplantation of roots of spinal in flaccid paralysis, 448 cavernous aneurysms in peripheral, 450 bilateral resection of pudendal, for vulval pruritus, 467

Pregnancy Clinical and embryological report of extremely early tubal, 11th study of intra uterine, ectopic decidual reaction, 49, 7, 11th, 9 and tuber culosa, 80 bilateral detachment of retina in nephritis of, 30 after operation for cancer of breast, 57 Wassermann reaction in, 366 blood sugar during, 366 tumors of breast arising during and lactation, 366 etiology and treatment of tubal, 366 uterine fibromyosarcoma complicating, 470 cause of tubal and tubal twinning, 471 immediate versus delayed operation in collapse following ruptured ectopic, 47, 11th, 47

Uterus Prolapse of with pelvic relaxation, 4 relation of hypertension to fibroid disease of, 4 indications for total ablation in certain cases of rupture of, 4 significance of aneurysms of vessels of, as indicated by stenovenous aneurysm of artery and vein of due to aural bone injury, 41 irradiation crises emaciation of fibromata of, 41 adenocarcinoma of fundus of, 42 end results of surgical treatment of carcinoma of cervix of, 4 intermittent respiratory hyperemia in infection of cervix of, 44 results of treatment of carcinoma of cervix of, 4 cancer in stump of cervix of forming metastases in vermiform appen-

BORD, E. Observations on Some Throat Conditions in Children	40
BARKER, J. W. Observations on the Results of Roentgen Therapy in Chronic Tonsillitis	403
KRUE, C. F. Tonsillectomy and Its Complications	40
FROST, F. A. Cysts of the Bursa Pharyngea	40
BERRY, G. War Surgery of the Larynx, with Special Reference to the Work at Cape May	40
JURGEN, A. Subcutaneous Abscesses with Oblique Torsion of the Larynx After Burn	403
Mouth	
HEWITT, G. E. Carcinoma of the Cheeks and Lips (General Principles Involved in Operations and	

Summary of the Results Obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York	4
JUNO, E S and NEW G B Carcinoma of the Tongue: General Principles Involved in Operations and Summary of the Results Obtained at the May Clinic	413
CHILL, G W Carcinoma of the Jaws, Tongue, Cheeks, and Lips: General Principles Involved in Operations and Summary of the Results Obtained at the Cleveland Clinic	474
VON BALLOON, E A Contribution to Our Knowledge of Noma	490
DARLING, B C Can the Medical and Dental Professions Agree on any Standardized Treatment of the Fomae of Infection?	501

## BIBLIOGRAPHY

## GENERAL SURGERY

<b>SURGICAL TECHNOLOGY</b>	
Operative Surgery and Technique	445
Asseptic and Antiseptic Surgery	445
Anesthesia	445
Surgical Instruments and Apparatus	445
<b>SURGERY OF THE HEAD AND NECK</b>	
Head	445
Neck	447
<b>SURGERY OF THE CHEST</b>	
Chest Wall and Breast	447
Trachea and Lungs	447
Heart and Vascular System	448
Pharynx and Esophagus	448
Miscellaneous	448
<b>SURGERY OF THE ABDOMEN</b>	
Abdominal Wall and Peritoneum	448
Gastrointestinal Tract	449
Lower Gall Bladder, Pancreas, and Spleen	449
Miscellaneous	449
<b>SURGERY OF THE EXTREMITIES</b>	
Conditions of the Bones, Joints, Muscles, Tendons, Etc.	449
Fractures and Dislocations	449
Surgery of the Bones, Joints, Muscles, Tendons, Etc.	449
Orthopedics in General	449
<b>SURGERY OF THE SPECIAL ORGANS AND CORD</b>	
	449
<b>SURGERY OF THE NERVOUS SYSTEM</b>	
	449
<b>MISCELLANEOUS</b>	
Chemical Embolus—General Physiological Conditions	449
See VACCINES and FERMENTS	449

Blood	307
Blood and Lymph Vessels	307
General Bacterial Infections	308
Serological Diagnosis, Pathology and Therapeutics	308
Experimental Surgery and Serological Anatomy	308
Electrology and Modern Therapy	308
Industrial Surgery	308
Hospital Medical Education and History	308
Legal Medicine	308

## ETHIOLOGY

Uterus	309
Adrenal and Pan Uterine Conditions	309
External Genitals	309
Mucous Membr.	310

**OBSTETRICS**

Pregnancy and Its Complications	\$10
Labor and Its Complications	\$10
Puerperium and Its Complications	3
Newborn.	\$1
Miscellaneous	6

### GASTRO-URINARY SURGERY

Adrenal, Kidney and Ureter	D
Bladder, Urethra, and Penis	S
Genital Organs	J
Mucilaginous	GI

## SURGERY OF THE EYE AND EAR

Eye	513
Ear	514

## SURGERY OF THE NOSE, THROAT AND MOUTH

Now	54
Throat	34
Mouth	11

# INTERNATIONAL ABSTRACT OF SURGERY

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## ABSTRACTS OF CURRENT LITERATURE GENERAL SURGERY—SURGICAL TECHNIQUE

### OPERATIVE SURGERY AND TECHNIQUE

Tackhoff, B. Hypertonic Glucose Solutions as Prophylactic Against Injurious Effects of Operation and Anesthesia (Hochprozentige Traubenzuckerlösungen, als Prophylaktikum gegen Operationen und Narkosewirkungen) *Zentralbl. f. Chir.* 93 222, 247

On the evening previous to a major operation an of a sterile per cent glucose solution are slowly injected into the ulnar vein. Concentrations of from 20 to 50 per cent may also be used. The only unpleasant after effect is chilliness. The injection is given the evening before the operation because its optimal effect does not appear until twelve to twenty hours later. The pulse is strong and of good tension after the operation and the curve reaches the same height as before.

The effect upon the anesthesia is very favorable. The stage of excitation is lessened and may be completely abolished, the amount of anesthetic necessary is reduced, and nausea and vomiting are prevented. If the injection is not given until after the operation it is of little benefit. *WORMA. W. (Z)*

Melchior, E. The Physiology of Wounds (Ueber Wundphysiologie) *Beitr. kl. Chir.* 9

Melchior discusses the normal and pathologic physiology of wounds and the biology of healing processes. As vicarious replacement tissue the most important function of granulations is the provisional closing of the surface of the wound. This is directed partly against the outflow of body juices and partly against the penetration of substances from the exterior.

It has been assumed that the fine cellular processes in wound healing are set in action by hormones which are freed by the decomposition of the tissues in the region of the injury (Bier) and stand in close relationship to a phenomenon designated as cytotropism (Ross). Disturbances of wound

healing include those of general and those of local nature. In the former the constitution of the subject and severe general diseases play an important part also the condition of the endocrine glands. The causes which may contribute toward retardation or prevention of wound healing are therefore extraordinarily manifold. *NARICI (Z)*

### ASEPTIC AND ANTISEPTIC SURGERY

Rowell, H. G. The Surgical Importance of Iodine Idiosyncrasy and Poisoning. *Surg. Gynec. & Obs.* 93 222, 9

Iodine is a disinfectant for skin and open wounds commonly used by the laity and the medical profession. The author calls attention to the fact that in rare instances patient may exhibit an idiosyncrasy to the drug its use being followed by conditions ranging from local lesions to death.

Reports of iodine idiosyncrasy in the literature deal largely with cases in which iodides were ingested those in which iodine was used externally being few. It is generally believed that a very small dose can produce the reaction hence the use of small quantity through the skin may be sufficient. Ormsby states that the physical reaction to the drug, and not the dose is the important factor. Coca maintains that the drug allergy is not essentially different in its underlying mechanism from that of idiosyncrasy toward non-medical substances. The reaction usually appears in a few hours but may be delayed for five to twenty days.

A case reported by Rowell was that of a man 55 years of age who was admitted to the Massachusetts General Hospital for gastric study and with the additional diagnoses of inguinal hernia on the left side and enlargement of the prostate. His history seemed favorable except for an attack of gonorrhea thirty-three years before which was followed by gleet. Ten days after his admission to the hospital he was operated upon for chronic appendicitis with hyperchlorhydria. A Bassini repair of the left

dis. 6 regions of, and accident, 6 retroversion of, following delivery 30, after cesarean section, 30, action of ergot and solution of hypophysis os, 30, radical operation for vaginal and femoral hernia with plastic use of, through abdominal cavity and simultaneous laparotomy for another condition, 7 use of suture as traction in vaginal operation for prolapse of 36, pre-cancerous conditions of cervix of, 36 restoration of round ligaments to retroversion of 36 surgical treatment of postperal gas bacillus infection of 9 statistics and technique of treatment of fibromyoma of, by radiotherapy 30 unproved method of supporting bladder and vagina after apical hysterectomy for prolapse of, 50 best method of treating of fibromyoma of by means of roentgen rays, 5 cancer of, 5 fistula involving bladder vagina, and, 53 treatment of cancer of with moderate irradiation, 53 statistics of carcinoma of 55, microscopic as compared with clinical diagnosis of malignant neoplasms of, 56 pathology of bleeding of 56 treatment of cystocele rectocele, and prolapse of, 56 cesarean section for delivery of pregnant half of double, 570, effect of secretion of on coagulation of blood, 461 effect on aspects of fertilization of, 46 radium in treatment of leukorrhoea of of non malignant type, 463 chronic inflammation of cervix of and its treatment, 465 diagnosis of cancer of 466 radium treatment of cancer of cervix of, 466, association of different malignant tumors and tuberculosis in, 466 fibromyoma of, complicating pregnancy 470 clinical carcinoma

section under local anesthesia with temporary fixation of, 473 acute complete inversion of, 473

The man who has turned to his recently published Principles of Surgery or System of Surgical Diagnosis and Treatment and found they lack some of the facts he needed most to know chiefly because of the time inevitably consumed in the collection, editing revision, and printing of standard textbooks, will be the first to recognize how completely these subjects as a whole, and how well recent developments along these lines are covered in the current volume of the ABSTRACT

One word more The abstracts of original articles are written by surgeons, men whose interest and activity in their particular fields are attested by their enthusiastic co-operation in the work of preparing the ABSTRACT The reviews they present are intelligent, discriminating reports written with the one idea of presenting accurately and concisely the viewpoint and ideas of the author

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Reports of iodine idiosyncrasy in the literature deal largely with cases in which iodides were ingested, those in which iodine was used externally being few. It is generally believed that a very small dose can produce the reaction, hence the entry of a small quantity through the skin may be sufficient. Ormby states that the physical reaction to the drug, and not the dose, is the important factor. Coca maintains that the drug allergy is not essentially different in its underlying mechanism from that of idiosyncrasy toward no medical substances. The reaction usually appears in a few hours but may be delayed for five to twenty days.

A case reported by Rowell was that of a man 55 years of age who was admitted to the Massachusetts General Hospital for gastric study and with the additional diagnoses of inguinal hernia, the left side and enlargement of the prostate. His history seemed favorable except for an attack of gonorrhea thirty-three years before, which was followed by gleet. Ten days after his admission to the hospital he was operated upon for chronic appendicitis with hyperchlorhydria. A Bassini repair of the left



inguinal hernia was also done. The patient was given 8 oz. of ether and wide preparation with half strength tincture of iodine. After the herniotomy a large raised hematoma was noted in the abdominal wound. This was opened after a new table toilet and another local application of iodine. A few days later the patient was placed on the improvement list, but the next day he became irrational and was again placed on the danger list. Around both the hernia wound and the rectus wound there appeared purplish color which gradually spread. Death occurred ten days after the operation. Most of the abdomen was purplish, and purplish lacerations developed on the lower limbs.

The prognosis depends chiefly on the severity of the symptoms, but in all cases serious, the mortality being very high.

There is no specific treatment. Starch, the alkaline antidote for iodine may be given in solution in the stomach. In the average case the usual methods of increased elimination are logical, and in the purpuric type at least transfusion is indicated, often more than once.

On the basis of his investigation the author draws the following conclusions:

1. There is very definite iodine allergy closely related to, if not the same as, iodine poisoning and iodism and identical with the toxic effects produced by the iodides, to which iodine is converted on absorption.

In cases of allergy the symptoms closely resemble those of poisoning, the chief difference being the amount of iodine producing them.

2. While undoubtedly the condition is rare the precautions indicated re a carefully taken history and a reasonable effort to prevent absorption by restricting the iodine to limited areas and removing it soon by means of alcohol. The palatage of post-operative wound with iodine has unfortunate possibilities. In doubtful or suspicious cases some other disinfectant should be used.

3. In postoperative cases showing allergic symptoms, a test should be made for the drug and if it is found, appropriate treatment should be given depending on the severity and type of the symptoms.

4. The frequent use of iodine by the laity for the early sterilization of open wounds is associated with possible danger. In the surgery of compound fractures the full strength solution should be used with discrimination. A careful inquiry with regard to previous reactions will aid in avoiding fatal accidents.

5. In cases with marked idiosyncrasy even painting the skin with small amount of iodine may cause symptoms.

6. Transfusion, when used, should be repeated whenever the patient is losing ground.

7. Before iodine is used in the case of a patient who has been treated with iodides for syphilis or some other condition, his previous reaction to the drug should be determined.

8. I spot of the efficiency of certain iodine salts as infections for urological X-ray examinations, we must recognize theoretical danger their use.

9. In industrial plant where iodine or its fumes are present, workmen sometimes show symptoms of acute or chronic poisoning. Therefore treatment of their injuries with iodine must be potentially dangerous.

10. Iodine need not be discarded as a disinfectant but its removal by alcohol immediately after its application is desirable. G. Oscar E. BERRY, M.D.

## ANESTHESIA

WERNER, O. Clinical Investigations on the Behavior of the Blood Pressure and the Pulse During and After Novocaine-Adrenalin Anesthesia (Abhandl. Intern. Chir. u. Gyn. u. d. Verh. d. Dtsch. Chir. u. Gyn. Gesellsch. 1930, 30, 1-10). Novocaine-Adrenalin Anesthesia. *Deutsche Zeitschr. f. Chir.* 1930, 30, 1-10.

The purpose of the author in this investigation was to determine the behavior of the blood pressure and the pulse during and after novocaine-adrenalin anesthesia. The novocaine-adrenalin anesthesia was used for local anesthesia and partly for induction anesthesia. The pulse and blood pressure (by the pressure determined by the Riva-Rocci apparatus) were recorded few minutes previous to the induction of the anesthesia and the determinations were repeated thereafter at intervals of 1 minute. Only those cases were included in the study in which no signs of general novocaine-adrenalin intoxication were observed during the induction of anesthesia or the operation, particularly symptoms on the part of the nervous system. The influence of psychic factors was minimized as much as possible by the administration of morphine.

In a number of cases there were no marked changes in the pulse or the blood pressure either during the induction of the anesthesia or during the operation. Fluctuations in the blood pressure of 20 mm Hg. and a change of the pulse rate of 10 per cent in the pulse were considered insignificant. In other cases, the anesthetic caused considerable increase in the blood pressure and, in some, considerable reduction. In those in which an increase occurred the pressure rose to 78 mm between 1 to thirty minutes after the beginning of the anesthesia. As a rule the rise was noticed first in from four to six minutes occasionally it preceded the rise. In general, the rise in the blood pressure did not proceed at all by the anesthesia secondarily occur within the first ten minutes.

The cause of the rise in the blood pressure should be sought in the adrenalin content of the fluid injected. The pressure usually declined again very rapidly the decrease occurring as a rule from 1 to four minutes after the highest value was reached. In only a few cases did the high value persist for 15 to 20 minutes. In isolated cases the blood

pressure rose steplike in response to repeated injections of the novocaine-adrenalin solution. In others, further injections caused no renewed increase and in some, when the fall in the curve had already begun, it was not interrupted by other injections. On the whole, the blood pressure sank after the initial rise only to the original value and in the subsequent course of the operation showed only inconsequential fluctuations. In some cases, however, the curve was such that after the initial rise there was decrease below the original value in many instances considerably below the original value. From the practical standpoint the question arises as to whether this fall in the blood pressure which frequently occurs before the operation is begun and reaches its maximum during the operation, denotes a dangerous condition. In the author's opinion it does not as it is not sufficient to cause collapse. Collapse may occur however if at the time

of the deep fall in the blood pressure operative effects become active, especially hemorrhage.

Eight cases of sphincter anesthesia induced by the Lapps method showed no differences from cases of anesthesia of another type. STAMM (Z)

### SURGICAL INSTRUMENTS AND APPARATUS

Reckenwald, J. J. A Thoracic Abdominal G ta. *N York M J & Med Rec* 9 3, XVII.

This is an instrument to maintain a permanent opening into the pleura, lung, stomach, liver, colon, cecum, ovaries, bladder or uterus. It obviates the necessity for repeated incisions. It is so constructed that it can be introduced into a very small opening and is held in place by its outer and inner plates. It can be used when it is necessary to treat the interior of an organ repeatedly as for radium applications, instrumentation, etc. MARCOE HOWARD M.D.

## SURGERY OF THE HEAD AND NECK

### HEAD

Bladd, H. E. Fracture of the Skull and Its Complications. *Am J Surg* 9 3, XVII, 23.

During the last decade there has been unusual opportunities for the study of head injuries because of the recent World War and the constantly increasing number of traffic accidents. While the war injuries were for the most part of decidedly different nature from those seen in civil practice, the same principles of treatment are applicable to both types.

The author divides cranial and intracranial injuries into three classes: (1) fractures of the skull without brain complications; (2) fractures of the skull with brain complications; and (3) brain injuries without fracture of the skull.

The first class represents the simplest form of skull injury. In such cases the routine X-ray examination is of the greatest importance. An interference brings the best results. Unless there is danger of complications, the treatment should never be surgical. To prevent the very serious complication of meningitis all scalp wounds, however trivial, should be carefully inspected for the presence of a fracture running through the base of the wound. If such a fracture is found, the scalp wound should be excised and the edges brought together without drainage.

The X-ray examination will reveal the presence or absence of depressions involving the inner table or of detached pieces of bone within the brain substance. If depression is found, it should be raised as soon as the patient's condition will permit the operation. In this procedure it is often necessary to remove a considerable amount of comminuted bone leaving large defects in the skull. These defects should be closed with free bone transplant at a later time. It is also imperative to remove bone spicules from the brain substance.

The second classification, that of fracture of the skull with brain complications, and the third classification, that of brain injury without skull fracture, differ only in so far as injury to the bony structures is concerned and therefore may be considered together. The treatment for such cases has been previously described.

Immediate injuries to the brain or its blood vessels are due to laceration, edema, and hemorrhage and remote injuries to gliosis, scar or cyst formation, etc. Modern technique has not arrived at the stage of perfection permitting brain suturing. The second and third causes of immediate injuries, edema and hemorrhage, may be considered together as both are apt to produce cut cerebral compression.

Some very illuminating experiments demonstrating the effects of cerebral compression have been performed by Kocher, Hill, Cushing, and others. In many of these experimental phenomena are at times very accurately reproduced by cerebral hemorrhage or edema.

Numerous factors enter into the recognition of cerebral compression but history of injury followed by protracted unconsciousness and increased pulse pressure and the presence of one other symptom is sufficient to establish the diagnosis.

The ideal method of remedying intracranial hemorrhage would be to ligate the bleeding vessel and evacuate the clot, but this cannot be done as it is still impossible to localize subdural hemorrhages accurately. Therefore the treatment must be symptomatic and expectant.

A procedure frequently mentioned in the literature is lumbar puncture. The author states that in cases of this kind lumbar puncture is dangerous undertaking and as the cerebrospinal fluid quickly reforms its therapeutic value is at least very doubtful.

OSCAR E. BILLY M.D.



Lundberg, S. Increased Cerebral Pressure with Fat Embolism (Gestörter Hirndruck bei Fett embolie) *Acta chir Scand* 94 47

Fat embolism is the most common form of embolism because it occurs frequently in fractures of marrow containing bones and occasionally also in injuries of the soft parts. Only the cerebral form produces the more serious symptoms leading usually to death. A case is reported in which contrary to previous observations no led increase in the pressure of the cerebrospinal fluid resulted.

The patient was a farmer 35 years old who was injured by the trunk of a tree falling on his right leg. A few hours after the injury there was a rise in the temperature to 38.6 degrees C in spite of the fact that the fracture was uncomplicated. Headache and sleepiness soon developed. The temperature rose still higher and the sleepiness increased to complete coma. Repeated lumbar punctures revealed a pressure of 400, 300, and 300 mm of H<sub>2</sub>O. Neither lumbar punctures nor a craniectomy caused any improvement. The patient died four days after the injury. At autopsy very numerous fat emboli and small hemorrhages were found in the brain. Fat emboli were present also in the lungs, but in smaller numbers.

This was a typical case of cerebral fat embolism ending fatally fourteen days after the injury. The increase in the pressure of the cerebrospinal fluid to 400 mm of H<sub>2</sub>O is of particular interest as up to the present time increase has been considered signs indicating the absence of fat embolism. Death from cerebral fat embolism, the brain shows hyperemic edema and hemorrhages. The requirements for an increase in volume in the cranial cavity are therefore present. Lumbar puncture is an important therapeutic measure. The injury to the brain produced by the pressure is slight in comparison to the primary injury produced by the fat embolism. The assumption is perhaps justified that after the lowering of the intracranial pressure the blood comes out for the blood to carry the fat drops lying in the brain into the general circulation.

SCHWARTZ (Z)

Fay T. and Grant, F. C. Ventriculography and Intraventricular Photography in Intracranial Hydrocephalus. *J Am Med Ass* 93 1222, 46

The authors report the case of a boy 12 months old, who was brought to the hospital by his mother with the request that something be done to check the progressive growth of his head. The child's birth had been difficult, labor having continued for three days before delivery was effected by means of forceps. The mother first noted that the child's head was larger than normal four months later. For the next six months it had been gradually increasing in size. On the child's admission to the hospital his head measured 64 cm in circumference and 4 cm from the glabella to theinion. The forehead was massive and the face small. The general physical condition was excellent.

In this particular case the main object of treatment was to establish an outlet through the corpus callosum for the relief of the acute internal hydrocephalus. An approach through the dilated ventricle with an operating cystoscope was suggested. The operation was performed under light anesthesia. Clear fluid under considerable pressure escaped. The cannula was then removed and no cystoscope was inserted to obtain a view of the ventricle walls. The wound was closed after a sufficient amount of fluid had escaped to relieve the pressure. After slight reaction the child's condition returned to normal in a few days.

Two weeks later a second exploration was performed, this time on the left side, the posterior horn of the ventricle being entered from the parieto-occipital lobe. Only a small amount of cerebrospinal fluid escaped during this operation, evidently because the pressure had been relieved previously. One week later a third operation was attempted, but on account of the fact that the instrument which was to be used for entering through the corpus callosum was defective it was not completed. Following this operation there was very little reaction and the child was in excellent condition. A favorable opportunity is being waited by the authors for the completion of the final stage of the third operation.

From the results obtained thus far the following conclusions are drawn:

1. Intraventricular photography and ventriculography are possible in the presence of dilated ventricles.

2. Little or no reaction follows such a procedure when it is properly conducted.

3. The diagnostic value of direct inspection of the ventricular cavities may prove of considerable importance in determining the location and the extent of focal lesions causing deformities of the ventricles.

4. A satisfactory approach with regard to the area and the extent of the opening desired for callosal puncture under direct observation may be made through a dilated ventricle.

5. The photographic reproduction of structures or lesions within the ventricles requires exposure of at least forty seconds. GEORGE L. BENTLEY, M.D.

Davis, L. E. Lesions of the Paratrigeminal Area. *J Am Med Ass* 93 1222, 350

Attention is called to cases characterized by pain in the distribution of the trigeminal nerve, wholly unlike the pain of true major trigeminal neuralgia. These must be accurately differentiated because section of the sensory root will not give relief. They differ entirely from sphenopalatine neuralgia described by Sluder and may be differentiated by placing cocaine on the nasal mucous membrane overlying the sphenopalatine ganglion or directly injecting this structure.

The author reports two new cases and one from the literature in which pain in the distribution of the

Graves, S. Fracture of the Skull Base with Superficial Hemorrhage on the Opposite Side. Report of an Interesting Autopsy. *Kentucky M J* 1933, 21, 634

The author reports the findings of the autopsy performed on a man 70 years of age to determine whether the cause of death was fracture or poplexy. There was a history of chronic nephritis and two attacks of poplexy.

A linear fracture of the base of the skull was found on the right side extending from the inner end of the sigmoid sinus to the occipital protuberance. There was no hemorrhage near this fracture but superficial basal hemorrhage was discovered on the left side under the frontal and temporal lobes.

There was very little arteriosclerosis and the blood vessels of the brain were not so degenerated as would be expected in a man of this age. The kidneys were cystic and fibrous, and the heart was hypertrophied and dilated.

The author concluded that the death was due to skull fracture that the hemorrhage on the opposite side was due to *force contrecoup* and that the lower spine company was liable for death from accident.

MAURICE H HOWARD, M.D.

Sayed, W. Y. and Harvey S. C. The Regeneration of the Meninges. *Ann S S* 1933, 10, 127.

Like the peritoneum, the dura will take care of its own defects and eventually close them over. The question of the formation of adhesions following natural repair of the dura has brought forth divergent opinions. The authors have therefore subjected the healing of the dura to experimental investigation. They carried out their experiments in dogs.

Through trephine opening of the parietal bone section of dura was removed, care being taken not to injure the subjacent arachnoid and pex. The dura and bone defect were allowed to fill in with blood clot and the wound closed. Layers above it. After certain time interval the animals were sacrificed the brain was fixed *in situ* the tissues surrounding the wound were removed *en bloc*, and the gross and microscopic appearances of the structures were carefully studied. The protocols of eight experiments are given and illustrated by drawings and photomicrographs.

From these experiments the authors conclude that regeneration of the dura occurs by organization of blood clot.

Numerous phagocytes, polyblastic cells and fibroblasts invade the clot from the overlying temporal muscle to which it is intimately adherent. These cells penetrate through the arachnoid membrane where they become arranged in a plane tangential to that surface and after a week there appears a limiting membrane resembling the endothelial lining of the normal dura. Further change is marked by the growth and condensation of connective tissues behind the lining cells.

The cells invading the blood clot always come from the temporal muscle and adhesions do not form if the arachnoid has not been injured.

The authors conclude that defects made in the dura of the dog operatively without injury to the adjacent arachnoid heal in from one to two weeks and without the formation of adhesions.

V. G. BARNES, M.D.

Hawthorne, C. O. Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children. *Practitioner* 1933, 91, 413.

The author reports the cases of two boys who died suddenly from cerebral and cerebellar hemorrhage respectively. The symptoms were similar to those of the apoplexy of adults. Similar cases in the literature are cited, but are relatively few as the condition is rare.

The etiology is very vague, no one cause being determined for all cases. Many theories have been advanced.

The conclusions drawn are as follows:

Children and young adults cannot be altogether excluded from the chance of intracranial hemorrhage.

The hemorrhage may occur at a time when the subject appears to be in good health.

3. The hemorrhage may cause immediate coma and early death, or may be followed by symptoms suggesting meningitis which persist for several days or weeks.

4. Apparently slight violence may be responsible for poplexiform symptoms and the latter may be delayed for several days. MAURICE H HOWARD, M.D.

Mogilnitski, W. The Parasitology and Pathological Anatomy of Brain Cysticercosis (Zur Parasitologie und pathologischen Anatomie des Gehirns Cysticercosis). *Wissenschafts Dyl* 1933, 24, 137.

In looking over the material of the Anatomical Institute the author found the following hitherto undescribed case in which fully developed tenia was discovered in a cysticercus cyst of the brain. On one of the cysts was a very unusual structure 4 mm long and 1 mm wide which had a broad base and narrow ped. From central cavity there radiated from seven to ten lateral branches terminating in small blood sacs. At about the middle was a small irregular nodule. The tissue was made up of round and stellate cells. Careful examination revealed a fully developed tenia.

It is to be concluded that in this case the scolex assumed the rôle of the host. If the human organism there are substances which dissolve the egg envelope of the cysticercus and allow the tenia to develop and it is possible that in status thymicolymphaticus substances reformed in the tissues which change the wall of the cyst. The size of the vesicles (1 to 30 mm) with typical uteri (7 to 1 lateral ramifications) indicates that this was a case of tenia solium cysticercosis cerebri which had begun to develop into tapeworm. LUTHER (2)

41st hours (pulse 180-200) Twenty-four hours after the operation the patient was in a semi-stupor with temperature of 102.4 degrees F tachycardia, extreme restlessness, evidence of marked weakness, and shallow rapid breathing. The blood-sugar was found to be 0.5 gm per 100 c cm (normal 0.9 to 1.0 gm per 100 c cm).

Glucose was given very slowly intravenous (40 gm in 20 per cent solution). An immediate improvement in the patient's condition was evidenced by her response to questions. Six hours later her condition again became desperate. Stupor developed, her color became ashen pale, her respirations very irregular. There was a constant mucous rattle in the throat. The pulse was 180.

A second injection into the vein of 5 gm of glucose in 20 per cent solution was given. Again there was an immediate response by an improvement in color and regular respiration, but without return to complete consciousness as before. This improvement was not well sustained during the next six hours, but from this point on there was gradual betterment eventuating in complete recovery. Ten hours after the second administration of glucose the blood-sugar was 0.9 gm per 100 c cm. With the exception of the specimen taken the morning after the operation, the urine during the two days was negative for ketone bodies. It seems evident that in these cases we are dealing with a hypoglycemia rather than an acidosis and that the latter condition is probably incident to the first.

Other observations have been made which reveal a marked reduction in blood-sugar appearing twenty-four to twenty-six hours after operation and corresponding to the postoperative period when the greatest reaction occurs.

The rationale of the administration of glucose solution intravenously is suggested by these few studies, controlled and dependent upon successive blood-sugar determinations. The author emphasizes the importance of high carbohydrate and high caloric diet in the pre-operative treatment of exophthalmic goiter and the administration of 5 per cent glucose solution per rectum in the postoperative care.

ARTUR L. SEIKENTHAL, M.D.

Floercken, H. The Method and Technique of Operation for Goiter (Ueber Methodik und Technik der Kropfoperation). *Beitr. N. Chir.* 9: 229-35.

Up to January 31 Floercken operated on 365 cases of goiter coming from Westphalia and Frankfurt. These included thirty-nine cases of Basedow disease and five cases of malignant struma. The rest were diffuse and nodular goiters. Hypertrophic polycythemia as found

A bilateral resection with ligation of all of the four vessels was done in ninety cases. In sixty cases only three vessels were ligated. In the remainder hemistrulectomy with or without removal of the isthmus or combined with enucleation or partial resection of the other side was done. In one severe case of Basedow's disease only three vessels were ligated.

Goiterous patients with cardiac disturbances were prepared by bed rest, digitalis and 5 gm of quinin hydrobromide twice daily. The operation is always done under local anesthesia induced with 5 per cent novocaine-adrenalin solution preceded one hour before by atropin and scopolamine or morphine and tropin. The collar incision of Kocher is used. In cases of large goiters and those previously treated by iodine rubbing or X-ray irradiation the muscles of the neck are divided as much as necessary. The superior artery, ligated not to the main stem but in its branches, in order to spare the superior laryngeal artery a vessel important for anastomosis. The inferior branch is ligated with catgut where it crosses the carotid artery. A portion of the thyroid gland as large as a thumb is left behind with the posterior capsule which is sutured from above downward. A drain is left in for two days. The formation of hematoma and serum occurs in 2 per cent of the cases.

The author's total mortality was 9 per cent. Slight postoperative tetany occurred once. It is not yet known whether bilateral resection with ligation of three vessels is sufficient. In Basedow's disease, bilateral resection with ligation of all four vessels is the operation of choice.

KLOSTER (Z)

Dalmann, H. An Unusual Case of Carcinoma of the Larynx. Pedicled Carcinoma of the Larynx (Ein seltener Fall von Larynxcarcinom gestieltes Larynxcarcinom). *Zucker f. Laryng. Rhin. etc.* 9: 22.

A case of pedicled carcinoma of the larynx springing from the right aryepiglottic fold is reported. The tumor reached the size of a hazel nut without showing any tendency to degeneration. The larynx itself was practically uninvolved, even at the site of the attachment of the tumor but there were metastases in the glands on the right side of the neck and involvement of the jugular vein and the carotid artery.

The tumor was extirpated with the aid of suspension laryngoscopy. The glands were removed and the jugular vein was partially resected. Because of the patient's age (53 years) the carotid artery was spared. Irradiation was given after the operation.

Up to the present time only five similar cases have been reported.

M. KROGER (Z)



the fistula and cavity injected with some opaque fluid. The mixture Eggers found most satisfactory consists of 30 per cent bismuth subnitrate in cottonseed oil to which 3 per cent acacia is added.

Most of the so-called complications of chronic empyema are in reality complications which developed during the acute stage and were carried over into the chronic stage. The most common of these is anemia. Among the other true complications the most important are endocarditis, myocarditis, and multiple arthritis.

Treatment to improve the general health should be coincident with attention directed to the local condition. Nourishing food, fresh air and sunshine, graduated breathing exercises, and encouragement of a general hopeful attitude constitute the essentials. The local treatment depends upon the conditions found upon the patient's admission to the hospital. Eggers uses the Carrel-Dakin treatment in all cases, at the same time correcting the underlying conditions. While he does not believe that Dakin's solution materially shortens the course of the disease in the acute form, he is of the opinion that it has certain advantages. It keeps the wound clean and does away with foul smelling pus, thereby preventing the absorption of septic material. With regard to chronic empyema, on the other hand, Eggers believes it has a beneficial effect. He adheres to the regular routine recommended by Carrel. After seven consecutive negative cultures, the treatment may be discontinued and the wound sealed. At the end of a week, it is usually found nearly closed. After this it requires only simple sterile dressings. During the period of irrigation special care must be taken to arrange the dressings so as to keep the patient dry and prevent skin irritation. In a few of the cases reversed, navel, arthritis, and an unexplainable elevation of the temperature occurred but disappeared when the irrigation was discontinued.

Of the 9 patients, 1 alive had a superficial fistula and were treated by complete excision of the tract and surrounding tissues. The others were treated by the Carrel-Dakin method as long as there was reason to believe it would lead to healing. In sixty-two cases which showed no tendency to heal, conditions interfering with healing were found. The patients were therefore subjected to radical operation.

Of the remaining 18, 14 healed in an average of one hundred and sixteen days from the last operation and fourteen were transferred unhealed. In these unhealed cases the chances for healing were good. They merely required more time and were therefore not operated upon.

Melvin H. Hackett, M.D.

Sadler J. E. A Study of the Cases of Carcinoma Mammaria Operated upon by Myself and the End-Result Obtained in Them. *S. & G. Surg.* 1913, xxvii, 15.

The author reports upon a series of seventy cases of carcinoma of the breast occurring over a period of twenty years. All of the operations were of the radical type including resection of the axillary and

supraclavicular glands when indicated. Some hopeless cases were submitted to operation unnecessarily. This could be remedied if a thorough X-ray examination of the mediastinum, lungs, etc. were made prior to operation to discover evidence of lung involvement.

Twenty-three of the patients (33.5 per cent) are alive and free from recurrence, and 14.5 per cent died from other causes without recurrence, making a total of 47.5 per cent in whom the disease did not recur.

The author cites two cases which demonstrate the variability in cancer malignancy. One was that of a woman 3 years old who was subjected to radical operation three weeks after she first noticed

a lump in her breast but died of metastasis six months later. In this case simple removal would doubtless have accomplished as much as the radical resection. The second case was that of a woman 65 years of age who, for three years, had a growing lump in the breast associated with axillary involvement, great emaciation, and ulceration and breaking down of the tumor. This patient was completely cured and died ten years later of pneumonia.

The author is of the opinion that a good many tumors considered recurrences are in reality new growths. In this connection he cites the case of a woman aged 60 years who had a radical resection of the breast for medullary carcinoma. Six years later she was operated upon for malignant disease of the urinary bladder. She recovered but ultimately died of carcinoma of the liver. The type of cell was different in each cancer.

Nine of the seventy patients whose cases are reviewed were under 40 years of age. Eight of these died of recurrence.

The prognosis seems best for the adenocarcinoma. That of the medullary type is least favorable.

William J. Peckett, M.D.

Morton C. A. Malignant Diseases of the Breast. With Special Reference to the Supraclavicular Extension of the Operation. *Bull. M. J.* 1914, 78.

This article is a study of 5 cases of malignant disease of the breast in Morton's personal experience. Of these 24 are cases of glandular cancer, most of them of the scirrhous type, three were cases of very much less malignant duct cancer, and six were cases of sarcoma. In order to ascertain the late results, an attempt was made to trace 30 consecutive patients treated in the period between October, 1908, and October, 1913. As the survey was carried out in 1914 the minimum period following operation was three years. Of the 30 cases Morton was able to determine the late results in eighty.

His desire was to discover the percentage of cases in which there was local recurrence because only this form of recurrence could have been prevented by more extensive operation. By local recurrence Morton means recurrence in the pectoral region, including not only the region originally occupied by the





Jackson, C. Bronchoscopic Clinic. Lung Suppuration Caused by the Prolonged Sojourn of Foreign Body. *Mof Chir. V. A. W.* 923 vi, 999

Jackson reports four cases of foreign body in the bronchi to emphasize the following points.

Foreign bodies in the bronchi cause lung suppuration simulating lung abscess, bronchiectasis, tuberculosis, empyema, bronchopneumonia, chronic bronchitis.

The signs as well as the symptoms clear up with surprising rapidity after the removal of the foreign body. Almost invariably the foreign body is found at the entrance to the area of lung suppuration. Hence its removal improves drainage.

In the cases reported in this article, as in hundreds of others, the foreign bodies were removed with ease and alacrity by means of the bronchoscope.

The length of time the foreign body had remained in the bronchi in Jackson's cases ranged from few weeks to thirty-six years. In most cases its presence had not been suspected. When a foreign body is radiopaque, attention may be called to it by the obstruction emphysema. If foreign body has been present long time the signs of lung suppuration will be noted. Some radio-opaque bodies will escape detection because of the overlying shadow of the heart or of lung suppuration.

When previously healthy child has sudden attack of choking and coughing followed later by bronchitis and asthmatic wheezing an aspirated foreign body should be sought.

RALPH B. BUTTERMAN, M.D.

Hammer, G. Pyopneumothorax (Zur Lehre von Pyopneumothorax). *Frankf. rt. Ztschr. f. Path.* 9 xxi, 50

On the occasion of the fourteenth meeting of the German Pathological Society the author exhibited series of frozen sections of the thorax preserved by the Kaserling method and pointed out their significance. Such sections are particularly valuable to demonstrate the conditions of pneumothorax. This article contains an illustration of a frozen section made in case of exudative pneumothorax of the most extreme grade occurring in man. A 3 years old who had a family history of tuberculosis and died of tuberculosis. The diagnosis of exudative pneumothorax was verified by the distinct splashing noise noted when the upper part of the body was shaken. Autopsy showed extensive metastatic and mesenteric tuberculosis. The cross section of the frozen thorax revealed advanced pulmonary tuberculosis with the formation of cavities and rupture into the right pleural cavity in which an exudative pneumothorax had developed. The exudate, amounting to about 3.5 liters had pushed the diaphragm downward and caused marked displacement of the mediastinal organs to the left. The diaphragm formed an almost straight line and lay obliquely upward from the right side to the left. The displacement of the mediastinal organs was so great that in the region of the heart the ventral

column could be grasped from the right pleural cavity. Other interesting features were an indentation of the wall of the right auricle and kinking of the ascending ventricle.

The specimen shows clearly how the so called tamponade or choking of the heart may be produced, not only by effusion in the pericardium, but also by effusion in the right pleural space. It demonstrates further that single glance the results of the serious functional disturbances caused by the anatomical and topographical changes of the thoracic organs, viz. (1) extreme difficulty in the gaseous exchange in the lungs, and (2) extreme difficulty in and eventually arrest of the circulation due to compression of the right auricle and kinking of the ascending ventricle. (Z)

Goetze, O. The Radical Phrenicotomy as an Independent Therapeutic Measure in Unilateral Pulmonary Phthisis (Die radikale Phrenicotomie als selbstständiger therapeutischer Eingriff bei einseitiger Lungentuberculose). *Klin. Wochenschr.* 9, 2, 1, 496-544

The author reports on the severe cases of pulmonary tuberculosis treated by unilateral phrenicotomy in the Frankfurt clinic. He emphasizes the harmlessness of this procedure. The diaphragm is paralyzed in such a way that total trophy of the muscle follows. As a result of this paralysis, the diaphragm rises more and more into the position of expiration. At the same time the thoracic cavity is diminished in its vertical direction as a result of the shrinkage of the diseased lung.

Goetze obtained surprisingly good results in his own cases. He states that the phrenicotomy should be done with the induction of the pneumothorax.

Jones, (Z)

Oestermeier, E. The Mobilization of the Entire Shoulder Girdle as an Aid to Thoracoplasty for Pulmonary Tuberculosis (Die Mobilisierung des ganzen Schultergürtels als Hilfsmittel bei der Thoraxplastik gegen Lungentuberculose). *Zentralbl. f. Chir.* 9, xli, 504

To mobilize the shoulder girdle from the thorax to facilitate approach to the first rib the author makes a Z-shaped skin incision from the sternal end of the clavicle to the vicinity of the insertion of the pectoralis major muscle on the humerus, from there along the outer lower border of this muscle almost up to the costal arch, and from there to the twelfth rib posteriorly. The pectoralis major and minor muscles are then divided close to their sites of insertion. The individual serrations of the anterior serratus muscle are separated from the ribs, and the latissimus dorsi muscle is incised on its lower lateral edge corresponding to the lower portion of the skin incision. The next step consists in blunt dissection of the pectoral muscles forward and of the serratus and latissimus muscles toward the back. Thus having been done the arm and shoulder girdle are drawn upward and the subclavian muscle separated.



## MISCELLANEOUS

Baldrey F. C. An Experimental Study of the Cause and Effects of Immobility of the Diaphragm. *N York M J Br Med Rev* 93 1918, 10

The author produced immobility of the diaphragm experimentally by three methods (1) by causing simple pleurisy with effusion by means of an irritant (2) by causing pleurisy with effusion by means of tubercle bacilli alone or with staphylococci, and (3) by freezing the phrenic nerve with ethyl chloride.

In the production of simple pleurisy with effusion twenty rabbits were given an intrapleural injection of 5 cm. of 10 per cent aqueous solution of peptone. This produced rapid exudation of serum into the pleural cavity usually of such an amount as to cause great dyspnoea and embarrassment of the heart action and necessitating aspiration in from eighteen to twenty-four hours. Fluoroscopic examination of these animals during the exudation revealed the effusion upon the affected side. The diaphragm was in a low position, motionless and flattened, its normal convexity being entirely destroyed.

Inversion of the animal with resultant gravitation of fluid away from the diaphragm caused the diaphragm to assume its normal position and established its motion. Following two or three aspirations the exudation ceased, and from the tenth to the twentieth day examination showed no or little fluid though the diaphragm remained immobile and in a low position.

At postmortem examination the chest was found retracted. The lung was adherent throughout its lower half where adhesions were numerous and heavy. The diaphragm was lower than normal, appearing as a straight line from the midline of the chest to the thoracic wall. Electrical stimulation of the phrenic nerve caused contraction of the diaphragm. On section, atrophy of the diaphragm muscle was found. There was wasting of the fibers with

collapse of the sheath and increased fibrous tissue. The diaphragm was therefore immobile because of (1) increased intrathoracic pressure and fluid, and (2) disease of the diaphragmatic muscle itself and (3) the presence of adhesions.

In the second series of experiments 5 cm. of distilled water containing virulent tubercle bacilli were injected into the pleural cavity. From the eighth to the tenth day fluoroscopic examination showed slight haziness on the side injected, but the diaphragm was functioning. The haziness gradually increased. About the twenty-fourth day slight effusion was observed. This accumulated slowly varied greatly in amount but in no case was more than 5 cm. and was usually bloody. Following the appearance of the fluid the diaphragm was motionless in practically every case, but it again functioned upon aspiration of the fluid. In all cases there was immobility of the diaphragm in the absence of fluid. The postmortem findings were very similar to those in the first series, the adhesions being present about the lower half of the lung and the muscle fibers of the diaphragm showing definite degenerative changes.

In the third series of experiments the phrenic nerve was exposed in the neck and ethyl chloride was applied for period of minute and half. Immediately after the operation the motion of the diaphragm decreased and at the end of ten hours was entirely absent. In this condition the diaphragm was in a high position of paralysis and showed a greater convexity than normal. Readings of water manometer after freeing of the phrenic nerve showed an increased positive pressure in the chest cavity. The immobility of the diaphragm persisted for from five to seven weeks. Section of the diaphragm showed atrophy of the muscle fibers.

In the author's opinion immobility of the diaphragm is produced not by a single factor but by the mechanical pressure of the fluid, the presence of adhesions and the disease of the diaphragm itself as shown by the histologic changes coming together.

RAUL B. BERTMAN, M.D.

## SURGERY OF THE ABDOMEN

## ABDOMINAL WALL AND PERITONEUM

Wolff, G. The Pathogenesis of Torsion of the Omentum. (*Beitrag zur Pathogenese der Verdauungsleiden*. *Beitr. Klin. Chir.* 933 1918, 93)

As 90 cases of torsion of the omentum have been reported a typical picture of this condition has become identified. Torsions of the omentum are divided into torsions with irreducible hernia, those that are associated with an empty hernial sac and those which occur without hernia. The condition is associated in some way with hernia in 90 per cent of the cases. In cases of hernia which have been present for years and suddenly become irreducible showing all the signs of peritoneal irritation, the diagnosis of

torsion of the omentum is made easily. When the hernial sac is empty the diagnosis is difficult.

The author reports the case of a man 46 years old who had had an inguinal hernia for many years. On the day of his admission to the hospital the hernia broke through. Attempts at reduction for five hours

on the part of the physician were without success. There was no visible peristalsis, but a large hernial mass extended into the scrotum. At operation, which was done twice, the hernial contents were found to be bluish red omentum which, twisted like an umbilical cord, passed upward into the abdominal cavity in a band as thick as the little finger. This band was resected. During the after treatment pulmonary embolism developed, but otherwise recovery.

was uneventful. The tip of the omentum was twisted 360 degrees seven times.

**Twisting of the omentum without any hernial sac** is rare. According to Perry the cases may be divided into the simple and the complicated. The latter are those in which the omentum is adherent to other abdominal viscera. A case belonging to the second group is reported as follows.

The patient was a woman 23 years old who had had attacks of pain in the region of the stomach for four years. During the last three months, they had become more frequent. There was no reason to suspect gall stones. At operation a gall bladder filled with numerous small stones and a short adhesion and a section of omentum drawn into a lip, the only part of the omentum left hanging from the transverse colon were found. The tag of omentum was resected because of the twisting of its pedicle. It turned 270 degrees on pedicle 1 cm broad.

In this case the torsion was entirely intra-abdominal. Although there was a inguinal hernia on the right side the latter had absolutely no relationship to the omental tag. A bulky thickened omental tag with a thin pedicle is predisposed to such torsion. It is of little importance whether the lump change originated in this hernia or owes its origin to inflammatory processes. Only the chronic stages caused by the torsion bring the disease picture of the torsion to an acute stage. In the second case reported in this article the attacks of pain were doubtably not to the torsion but to the traction exerted by the adherent omentum. There is therefore a clinical latent period, fact which agrees with the findings in animal experiments made by Paine and Littauer. Cases of hernia, the clumpy bridge of the omentum in the sac is the prerequisite for the development of omental torsion. If hernial protrusion results from the abdominal pressure the omentum may pass through the inguinal canal, the result of twisting motions. Schwartz (2)

Bacon, D. K. *Experiments in the Treatment of Peritonitis. Urological Urol.* 9: 1-11

In any consideration of peritonitis the most important single item is the question of drainage. The various mesenteries form membranous dividing walls separating the abdominal cavity into several definite regions which form natural paths for the extension of inflammation. The mesenteries themselves are both guides and barriers. When the peritoneum attempts to wall off an infection it is best to withhold food in order to decrease peristalsis. The administration of cathartics and purgatives is also to be avoided, but enemata if judiciously used may be given after the first twenty-four hours.

Morphine is of great value as an intestinal sedative and for the relief of pain. Abdominal applications, either hot or cold have an analgesic effect and produce vascular dilatation. Custom dictates that the patient be placed in Fowler's position. A important part of the treatment of peritonitis is the daily administration of 6,000 ccm or more of fluid.

This is best given through the skin. Water given by mouth may cause undue peristalsis.

In neglected cases of peritonitis in which feces is already present the outlook is unfavorable even when operation is performed. Frequent aspiration of the stomach may be of some value. Enterotomy is the only operation possible. H. W. Fox, M.D.

Jungeblut, C. W. *The Bactericidal and the Inhibitory Power of Ether. A Contribution to the Study of the Ether Treatment of Peritonitis (Ueber die bactericide und hemmungskraft der Aether. Ein Beitrag zur Frage der Aetherbehandlung der Peritonitis). Zentralbl. f. Bakteriol.* 9: 189-191, 90

To determine the value of ether treatment in peritonitis the author made bacteriological tests *in vitro*. He found that a concentration of 1 in fluid medium (bouillon culture) did not kill the investigated bacteria (paramecocci, bacillus coli streptococci and taphylococci ureas and albus) even when they were exposed to it for hours. The bactericidal power increased with an increase in the temperature. Ether vapor was more quickly effective than ether bouillon mixture. The author could not substantiate Signe's results. The addition of 1 ccm ether to solid media killed paramecocci and bacillus coli and weakened the streptococci, but had no effect on taphylococci.

However, while the bactericidal effect of ether was found to be slight, the tests on fluid and solid media showed a marked inhibitory effect. Therefore the author considers the introduction of ether into the abdominal cavity of value in threatened or beginning peritonitis. Thomsen (2)

Jepsen, J. H. and Pfeiffer, D. E. *Ochsner Treatment in Peritonitis. Surg.* 9: 33-34, 94

Reference is made in this article to the varying changes in attitude of leaders in surgery to and the treatment of appendicitis and peritonitis by the Ochsner method. This method seems to be less generally accepted today than in 1916. The authors, however, have had 15 years experience with it in certain cases of diffuse peritonitis.

Statistics show a general lowering of the mortality of acute appendicitis in the past few years. In America it is generally agreed that intervention is indicated in the early hours of an acute attack, but in some European countries, notably in France, surgeons are divided on this subject into the interventionists, the abstentionists and the opportunist. The interventionist favors immediate operation regardless of the stage of the disease or the general or local condition. The abstentionist will not operate in the acute stage unless after a period of observation, it is evident that the condition has failed to improve or has become worse. The opportunist believes in immediate operation if the attack has lasted no more than thirty-six or forty-eight hours, but after that prefers to wait for improvement before making operation.

A study of the attitude of surgeons in general toward acute and established peritonitis indicates that they may be classified into three groups: first, those advocating a waiting policy in all cases of peritoneal infection after the first two days; second, those favoring operation when the symptoms, local and general, are unfavorable or grave; and third, a large group who advise against delay under any circumstances except those in which life is greatly endangered.

While adhering to the general principles of the Ochsner treatment, the authors emphasize that it has certain limitations. First, it is difficult, and sometimes unsafe in young children because of early ascites from the starvation and sepsis, the lower vital resistance of the peritoneum at this age, and the greater danger in children of metastatic infections in remote regions. Second, immediate intervention is indicated when there is doubt as to the origin of the peritonitis, particularly when there is a possibility of the presence of perforative lesions of the gastrointestinal tract. Third, immediate operation is necessary when formerly localized abscess ruptures, as second localization rarely takes place. Three cases are cited to illustrate the septic character of the type last mentioned.

In cases of rupture of large appendix distended upon or basal perforation of a patulous appendix permitting leakage of fecal matter into an unprotected peritoneal cavity, operation may be delayed beyond the forty-eight hour time limit set for immediate intervention, but assuredly no longer.

It is generally agreed that the management of the disease is properly placed in the hands of the surgeon. Sweeping statements regarding general methods are all for the student mind, but the judgment of the individual surgeon, ripened by experience, shades the rigid application of these principles.

It is argued that early appendicular peritonitis should be operated upon without delay, trusting that the peritoneum will take care of this infection already liberated. It is argued that in this same type of case, rapidly subjected to anatomical and physiological rest, localization will occur and permit operation with relatively little risk. Reported results, however, do not show great difference in the mortality of cases treated by the two methods.

The mortality is highest in cases in which, when first seen, present symptoms of profound systemic toxemia, usually in the third day of the disease or later. Preoperative rest is favored in this type of case as the best method of lowering the mortality.

Certain cases show no tendency toward localization and are lost by a waiting policy, viz. (1) those of young children; (2) cases of delayed and fulminating gangrene or perforation; and (3) cases of intra-abdominal rupture of localizing or localized abscess.

A summary of the opinions expressed in the literature of the past five years is an interesting review of the discussed viewpoint on this subject by leading men.

V. E. DUBMAN, M.D.

## GASTRO-INTESTINAL TRACT

Rudolf A. Experiences in the Surgical Treatment of Gastropexia (Erfahrungen ueber die chirurgische Behandlung der Gastropexie). *Berl M Ch* 9: 337-39 3

The author recommends gastropexy on the basis of his experience in sixty-six cases (61.67 per cent cured, 26.7 per cent benefited, and 11.66 per cent not benefited). Of these, thirty-three were operated on by the Rovsing technique (53 per cent cured, 31.3 per cent benefited, and 50.6 per cent not benefited). In thirty-three cases the ligamentum teres was utilized according to the Perthes-Vogel method as modified by the author (7.5 per cent cured, 3.4 per cent benefited, and 7 per cent not benefited).

In Rudolf's modification the ligamentum teres is fixed to the anterior wall of the stomach with few interrupted sutures 1.5 cm distant from the lesser curvature and covered by a continuous row of sutures. The free end of the ligament is then drawn through a small opening made with a scalpel in cartilage of the left costal arch. The insertion of the ligamentum teres in the liver is fixed in a similar manner to the right costal arch, but in this case 10 sutures applied very close to each other are sufficient. In certain cases, but particularly ptotic lobes of the liver, resection of the lobes is undertaken. The best results are obtained by gastropexy in scoliosis.

VON RADWITZ (Z)

Moynihan, B. Some Problems of Gastric and Duodenal Ulcer. *Brit M J* 9: 3

Moynihan reviews his experience of the past ten years in the surgical treatment of gastric and duodenal ulcer. He defines a chronic ulcer as a visible and palpable lesion which has been present for months or years. The outstanding symptom is periodic and chronic epigastric pain. In a total of 98 cases there were 53 cases of duodenal ulcer (433 men, 98 women) and 164 cases of gastric ulcer (83 men, 81 women). Twenty-three patients had both gastric and duodenal ulcers.

Since 9 Moynihan has operated upon more than 500 consecutive cases of duodenal ulcer without a death. In every case the ulcer has been seen and demonstrated. The mortality in cases of gastric ulcer or gastric and duodenal ulcer treated by gastrectomy was 6 per cent. Only six of the cases of duodenal ulcers treated surgically were complicated by jejunal ulcer.

The diagnosis of duodenal ulcer can usually be made from carefully taken history. Surgeons have proved the great preponderance of duodenal over gastric ulcer. The diagnosis of gastric ulcer on the other hand, is more difficult. In these cases competent radiologist can be of great aid. The niche and notch in gastric ulcer and the deformity of the bulb in duodenal ulcer afford evidence of great value from diagnostic standpoint.

The average duration of symptoms was seven and one-half years in cases of duodenal ulcer (excluding

cases with perforation) and nine and one-half years in cases of gastric ulcer. Every patient had been treated medically during one or more of his attacks. Medical treatment is of great value in relieving the pain and curtailing the attacks but has invariably failed to give permanent healing of the ulcer.

Patients with irreparable gastric ulcers treated by gastro-enterostomy plus jejunostomy were fed through a tube directly into the jejunum. No food or liquids were given by mouth. The healing of the ulcer as controlled by X-ray screen examination has always been very slow, requiring from six months to more than three and one-half years. The inter-relationship of abdominal disease can be properly demonstrated and suitably treated only by surgical intervention as in many cases gross disease in the appendix or gall-bladder antedates the ulcer. Oral sepsis always demands attention in patients presenting an ulcer syndrome. Medical cure seems powerless to prevent the recurrence of symptoms. Grave complications, chiefly hemorrhage and perforation, are apt to be associated with recurrent attacks.

In the Leeds Infirmary during the years 1901-1902 inclusive, seventy-five patients with gastric ulcer died from hemorrhage or perforation with peritonitis. In sixty the ulcer was of the chronic type. During the same period of time there were 30 cases in which death resulted from either hemorrhage or the perforation of duodenal ulcer. The full mortality of surgery is known. We are just beginning to appreciate the death rate among patients presenting repeated medical cures and dying several years later from grave complications of their latest chronic ulcers.

With regard to the incidence of cancer on an ulcer, the author states that an average of two thirds of the patients with gastric cancer gave a history, very suggestive of peptic ulcer. Of supposed chronic gastric ulcers 18 per cent have proved to be carcinomatous at the edge of the lesion. In one instance the raised, red, thickened edge of the ulcer showed on microscopic examination a columnar carcinoma on one side and an early scirrhous cancer on the opposite margin. According to McCarthy gastric ulcers with diameter of 1 cm. or more are practically always malignant. Without doubt, chronic ulcer undergoing malignancy frequently grows to such a size as to obscure all gross evidence of its previous presence.

Surgical treatment of gastric ulcer has passed through many stages. Gastro-enterostomy has given good results in many cases but for the surgery of today the results are not good enough. Mayo has discarded the clean excision of the ulcer with the knife because of the large number of recurrent ulcers following it. Balfour's cautery excision he regards as admirable for small ulcers high up on the lesser curvature associated with pylorospasm. Gastrectomy he believes is the operation of choice in the great majority of cases. In his hands it has been both safe and excellent as regards the permanency of cure. No other operation yields such uniformly

good results. He uses the anterior no loop method. The jejunum is brought from the lesser across the transverse colon from left to right and applied to the divided stomach so that the proximal part of the jejunum joins the greater curvature.

Mayo has employed this method in every case since June 1910. There have been no deaths and only uneventful early and late convalescences. No ulcers have recurred. No dyspepsia symptoms have followed this operation.

This article is a critical and admirable résumé of master surgeon work in the field of gastric surgery.  
JOHN W. NUNN, M.D.

Hardt, L. L., and Rivera, A. B. Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer. *Arch Int Med* 9, 3, 1911, 71.

Sippy attributes the chronicity of ulcer to the corrosive action of gastric juice and on this basis administers small amounts of alkali hourly over a long period (three to four weeks in the hospital and several weeks afterward). He says, "It may be helpful to know that in rare instances it has required the equivalent of 50 gr. (3 gm.) each of calcium carbonate and sodium bicarbonate every hour midway between feedings and every half hour after the last feeding until 9 p.m. to control the free acidity."

With one exception, it has been the experience of the authors that when an attempt is made to control the acidity in certain groups of cases symptoms of toxemia usually appear. Thus far however no one has studied the etiology and symptomatology of the condition from the standpoint of blood chemistry.

From the patients with peptic ulcer who were observed in the Mayo Clinic from April 1901, to April 1902, forty-eight were selected for study and classified in three groups. Group 1 consisted of sixteen patients who were treated for one week by hourly feedings of milk without alkali and then treated according to the usual Sippy method. This experiment was made to determine whether or not the milk alone was a factor in causing the complicating symptoms. Group 2 consisted of sixteen patients who were placed directly on Sippy treatment and remained normal throughout the course. Group 3 consisted of sixteen patients who showed toxic symptoms while under the Sippy treatment.

In practically all cases a twelve hour specimen of urine (night) was examined microscopically for blood, pus, and casts, and chemically for albumin and sugar. The specific gravity was estimated and the renal function was tested by the phenolsulphophthalein return. Blood urea, creatinin, and the carbon dioxide combining power of the plasma were also determined. These tests were repeated the day before additional food or alkali were given and again during the last week of treatment. If symptoms of toxemia developed, the laboratory data were again obtained. In Group 3 the blood urea was 50 mg. or more for each 100 c.c.m. Creatinin determinations were not made unless the blood urea was 70 mg. or

more. In one case the blood chlorides were also depressed during the period of toxemia.

The chemistry of the blood or urine as not affected in the milk control patients in Group 2 or Group 3. The sixteen patients of Group 3 exhibited definite symptoms of toxemia.

Symptoms of intoxication are apt to arise at any time during the course of the treatment, a thin four or five days after the powders are given, not until the third or fourth week, or following the use of two or three additional 5 gr. calcium carbonate powders. Patients whose gastric acidity persistently remains uncontrolled may show symptoms early.

Before the patients developed the more serious symptoms they seemed unduly introspective and nervous. They were irritable and complained about troubles which previously they had overlooked. The first symptom was distaste for milk. In some instances headaches came on almost simultaneously with the distaste for milk, and at this stage it was usually difficult to persuade the patients to take the powder. The headache persisted through the entire syndrome becoming more severe as the subsequent complaints arose.

With the increasing distaste for milk, nausea became pronounced and the patient vomited on making efforts to take food or water. The vomiting may become alarming and is checked with difficulty usually only after repeated gastric lavage.

Dizziness is a common symptom even in the milder cases. Aching pain in the muscles and joints is usual symptom. Respirations became slow, the pulse slightly accelerated, the face flushed and perspiration profuse. The patient lay in bed limp, apathetic, and very drowsy and was roused with difficulty. When the symptoms reached the point of nausea and vomiting (with few exceptions) the alkalis were stopped and the patient was put on 6-hour feedings consisting of milk, cereals, eggs, fruit juices, and meat broth. In all instances it was necessary to continue this treatment with small doses of alkali because toxic symptoms recurred after attempts to follow the Sippy régime.

During toxic manifestations the blood urea increased from 50 to 560 mg. for each 100 cc. and the creatinins from 2 to 5 mg. In the normal patients the carbon dioxide varied from 55 to 70 volumes percent in those exhibiting toxic symptoms from 65 to 75.

Albumin and casts were found at some time during the course of treatment in all of the sixteen cases of Group 3. In Groups 1 and 2 the blood was normal.

The gastric acidity was not controlled in any of the cases of Group 3 as a rule it was high. The average total acidity during the period of toxemia was 75 and the free hydrochloric acid 48.

The toxic manifestations, laboratory data, and pathologic findings in three cases of Group 3 led to the supposition that alkaline treatment may precipitate definite toxic symptoms in patients with renal disease. In these three the blood urea rose to 300 or higher.

Undoubtedly a marked pathologic condition of the kidneys was being dealt with. In all three cases the gastric acidity remained persistently high. The average free hydrochloric acid was 68 and the average total acids were . . . The point is emphasized that alkaline therapy directed toward the complete neutralization of gastric acidity is not only out of the question but also harmful.

In the other thirteen cases of Group 3 there was no clinical or laboratory evidence of nephritis or nephrosis when treatment was begun, but symptoms of varying degrees of toxemia associated with renal involvement became manifest within a few days to a few weeks later. It is hardly justifiable to conclude that these patients had definite nephritis at the onset. A more probable assumption is that renal disease with toxic manifestations was the result of the alkaline therapy. It has not been definitely determined which one of the salts or metals is responsible for the toxemia. However the diet is not the cause as none of the patients on the diet alone showed toxic symptoms. The fact that in these cases the acids were persistently high brings up the question of variation in absorption, perhaps depletion of blood chlorides. These patients and patients with gastric tetany had similar blood findings with the exception that in the latter there was depletion of chlorides in the blood.

The problem as to whether or not true alkalosis is produced by the large amounts of alkalis given is yet to be solved. The hydrogen ion concentration was not determined in this study but on the basis of the high carbon dioxide combining power of the plasma and the administration of large quantities of alkalis, the authors feel justified in applying the term alkalosis.

#### Guy E. F. The Effect of Gastro-Enterostomy on Gastric Function as Interpreted by the Fractional Test Meal. *Brit J Surg* 9:3, 2, 403

The author has modified the Rebuffs technique of obtaining a fractional test meal by giving a pint of oatmeal for the meal and then a 300 cc. of 2% every fifteen minutes. To obtain larger quantity it is often necessary to employ pressure in the syringe, which may cause minor hemorrhage of the gastric mucosa and thus introduce an element of error. Sixteen specimens are removed. Guy emphasizes the importance of filtering the specimen immediately before marked changes in acidity occur. In the following comparison A represents the titration figures of specimen filtered immediately and B those of the control specimen filtered after standing in the test tube for four to six hours at room temperature.

Example		Total Free HCl Acidity	
		A	B
Example	A	7	6
	B	7	7



In thirty-one of more than fifty cases examined the presence of an ulcer was confirmed at operation. In fourteen duodenal ulcer was found, in nine a pyloric ulcer and in three a gastric ulcer. The exact position of the ulcer in five is not known.

In fourteen of the twenty-six cases which were examined after gastro-enterostomy the acidity curves were obtained both before and after operation.

**Gastric ulcer.** The length of time during which tach could be recovered indicated that in cases of gastric ulcer the motility was reduced. Bile was present over longer periods than in the normal stomach. In cases of ulcers of the body of the stomach there was hyposecretion of acid.

**Duodenal ulcer.** In cases of duodenal ulcer the motility was increased even though the fibrous surrounding the ulcer encroached upon the pyloric ring. The presence of bile was less characteristic in this type. There was marked hypersecretion of acid, and the amount of resting juice was considerably increased.

**Pyloric ulcer.** In cases of pyloric ulcer the motility was definitely decreased as shown by the fact that starch granules could be recovered as long as three and three fourths hours after the meal. Absence of bile in the stomach seems to be a marked feature of these cases. There was hypersecretion of acid, but not so marked as in the cases of duodenal ulcer.

In a study of the effects of gastro-enterostomy on the different types of ulcer it was found that satisfactory gastro-enterostomy always increased the rate of emptying. Five tests carried out on patients subjected to partial gastrectomy, a still more rapid evacuation, as noted, the stomach being empty on an average within three fourths of an hour. In cases in which pain and vomiting recurred after gastro-enterostomy the emptying time was found to be 1 1/2 hours or longer and in one of these the stomach had ceased to function. After gastro-enterostomy for gastric ulcer there was usually marked lowering of the acid secretion, while after gastro-enterostomy for duodenal ulcer the decrease in acidity was less marked. The author does not agree with Sherrin that duodenal exclusion is the cause of postoperative hyperacidity as he has demonstrated that high acid level after operation is but the natural result of pre-operative hypersecretion and is not affected by variations in operative procedure apart from the provision of an adequate stomach. DEWEES W. CHASE M.D.

**Goldschmidt W.** The So-Called *Linitis Plastica* (Zur Frage der sog. Linitis plastica). *Arch. f. kl. Chir.* 9, 1912, 55.

The clinical and pathologico-anatomical picture of so-called linitis plastica is by no means clear although great deal has been written regarding the condition. Many authors emphasize the form of the stomach (leather bottle form, shrinking and thickening) paying little attention to its pathologico-anatomical aspects. It is therefore not surprising that numerous other gastric diseases

such as carcinoma, fibromatosis, syphilis, etc. are often included in the diagnosis of linitis plastica. This fact explains also the various opinions regarding the malignancy of the condition.

The author reports ten cases. The second, particularly showed the picture of linitis plastica macroscopically whereas an infiltrating carcinoma with colloid cancer cells was found on microscopic examination. In the discussion of the case Goldschmidt raises the question whether this lesion should be described as linitis plastica which it resembled macroscopically, or whether it should be designated simply as a colloid cancer according to the microscopic findings.

VOLLHARDT (2)

**Palagys J.** Roentgenological Investigations on the Functional Behavior of the Stomach in the Various Types of Posterior Retrocolic Gastro-enterostomy and Comparison of Its Value in Ulcer of the Stomach and Duodenum (Roentgenologische Untersuchungen des funktionellen Verhaltens des Magens bei den verschiedenen Arten der Gastroenterostomie retrocolica posterior und Vergleich ihrer Wertigkeit beim Ulcus stomachi und duodeni). *Deutsche Zeitsch. f. Chir.* 1912, 110, 97.

Palagys J. has investigated roentgenologically the functional behavior of the stomach following the different types of posterior retrocolic gastro-enterostomy on the material of the Hochberg clinic. On the basis of sixty-one cases he comes to the following conclusions:

In the selection of the type and position of the anastomosis the surgeon must consider whether the stomach is of normal size or dilated, and whether it has hook or cattle-horn shape. In the dilated stomach, he must consider to what extent the gastric wall will permit regression of the dilatation and whether adhesions are present at the pyloric portion which when the stomach is reduced in size, may produce change of form from hook shape to cattle horn shape. The first two points are determined by the X-ray examination and the latter by operation.

With the exception of those cases in which there is a ulcer of the cardiac or middle portion or a hour glass stomach, in which an anastomosis applied to the upper sac ought to produce favorable results, the following points should be taken into consideration in the performance of gastro-enterostomy:

In the hook stomach of normal size the choice between isoperistaltic and anisoperistaltic anastomosis applied at the caudal pole of the stomach should be governed only by the technical considerations. In cases of dilated hook stomach about pyloric adhesions the oblique isoperistaltic anastomosis comes up for consideration first of all and, secondly the vertical anisoperistaltic anastomosis. In cattle horn stomachs and dilated stomachs with pyloric adhesions—which may lead to a cattle horn form—anastomosis in the pyloric portion is preferable. The vertical isoperistaltic anastomosis

should be voided in every case. Although the loop may turn and will then give a good result, the difficulties and functional disturbances up to the time of the turning of the loop are not inconsiderable. Furthermore, in some cases turning of the loop does not occur and, as a result, there is permanent kinking.

NAGELS (2)

**Finsterer H.** Operations on the Stomach (Resections) in Advanced Age (Ueber Magenoperationen—Resektionen—im hohen Alter) *Wien med. Wochenschr.* 93, 1901, 64

On the basis of his own extensive experience Finsterer opposes the opinion held by many that the mortality of operations on the stomach in advanced age is so high that in general it is better not to undertake them.

Carcinoma is the chief disease of the stomach in advanced age for which resection is apt to be indicated. Operations are rarely performed for benign ulcer. A callous lesion which is called ulcer operation is usually found on later microscopic examination to be cancerous, but there are exceptions to this rule. The author reports three cases of patients over 7 years of age in which the clinical diagnosis as carcinoma, but the histologic examination of the tissue removed at operation revealed a beginning carcinoma on the basis of an old ulcer in only one.

Cases of perforation of ulcer or carcinoma which are rapidly fatal without operation are rare in old age. Finsterer succeeded in saving the life of a woman of 7 years of age by operation performed fifteen hours after the perforation of a duodenal ulcer in spite of desperate condition. The pulse at first very irregular, frequent, and scarcely perceptible became clearly perceptible after an intra-abdominal drainage of common salt.

Finsterer is unable to accept the view of many physicians and internists that the results of extensive operations on the stomach and intestines are worse in advanced age than in youth on account of the danger of pneumonia and heart weakness. In the operations on the stomach performed by Finsterer during the last ten years he has had almost as good results in old persons as in younger persons. Pulmonary complications so much dreaded, are rare here.

Carcinoma of the stomach. The prospect of permanent cure by operation are much more favorable in the cases of old persons than those of young persons since in advanced age the tumor is usually localized, does not spread, and very seldom forms metastases. Of 75 patients subjected to resection of the stomach and sixty subjected to gastrectomy for carcinoma, 33½ per cent were between 60 and 76 years of age. Of the patients 60 years of age who were subjected to resection twelve (1 per cent) died. The mortality of the 75 resections was only 7 per cent. Of the twenty-four cases, three were cases of extensive resections of the stomach and colon, and in five resection of the

pancreas was also necessary. Therefore in all of these cases the prognosis depended less on the age of the patient than on the extent of the operation. In thirty-nine cases in which simple resection was done by Finsterer there were four deaths, a mortality of 10 per cent. One of the deaths was that of a woman with very severe anemia due to bleeding for fifteen months caused by carcinoma of the stomach. The other three deaths were due to pneumonia. In one of these cases 150 cm. of the wall were used for the anastomosis in addition to local anesthesia. In the two other resections was performed under local anesthesia alone in one of these patients with large cancer ties was present, and in the other the pulmonary inflammation did not appear until the tenth day when the patient was up and about.

In general, Finsterer found that in very cachectic persons are often better than usual and all the most severe complications of operation. Of the patients over 60 years of age on whom gastro-enterostomy was performed three died following operation two from peritonitis and one from pneumonia. Gastro-enterostomy is only palliative operation but is definitely indicated when there is marked tenosis though many surgeons erroneously refuse to perform it on old persons.

Of 566 resections of the stomach for gastric and duodenal ulcer thirty-four were performed on patients between 60 and 76 years of age and of 12 gastric enterostomies with the same indications twelve were performed on patients between 60 and 84 years of age. In the latter three cases there was only one death that of a man aged 83 who was completely comatose twenty-four hours before the operation because of narcosis.

In the above experience, carcinomatous degeneration is exceedingly rare in duodenal ulcer hence gastro-enterostomy is often all that is necessary. In cases of gastric ulcer however resection should always be done without regard to age on account of the danger of carcinomatous change. In thirty-four resections for ulcer performed on patients between 60 and 74 years of age there were no deaths although among them were cases that had needed emaciation severe pulmonary disease etc. Deaths from peritonitis must be left out of the reckoning when judging of the dangers of the operation in advanced age because this danger is just as great in the cases of young persons. Finsterer's experience all cases of peritonitis caused by infection from without is fatal.

Finsterer attributes his good results especially to the absence of pulmonary and cardiac complications in the advanced age. Of fifty-five cases of resection for carcinoma forty-eight were performed under local anesthesia alone. Splanchnic anesthesia according to Braun's method is an important aid since 7 cm. of a 5 per cent solution of novocaine are injected into the fifth thoracic vertebra beneath the abdominal cavity to be opened. With the use of local anesthesia operation is possible in many cases with severe cachectic and

emphysema which forbid the use of ether or chloroform in even the smallest quantities. Therefore neither the family physician nor the internist has any good reason to advise against operation or represent it as particularly dangerous on account of advanced age of the patient. **ROSE (Z)**

Boyd, G. L. The Etiology of Acute Intestinal Intoxication in Infants. *Arch Int Med* 923, XXX 197

The author's summary is as follows:

Extracts of intestinal mucosa membrane from cases of acute intestinal intoxication in children contain toxic substance which, when injected into animals produced definite syndrome consisting of depression and narcosis, anorexia, circulatory failure, an increase in the number of intestinal evacuations and in some cases convulsions and death.

Younger animals were much more susceptible to this toxic substance than older animals.

3 The toxin is not destroyed by boiling and passes through bacterium tight filter.

4 Crystals resembling those of the dipicrate of  $\beta$ -imino acetylthylamine were obtained by appropriate means, from the extracts of intestinal mucous membrane.

5 These crystals proved anotoxic to animals until their basic character was restored by prolonged boiling in alcohol, when they became highly potent.

6 Previous dehydration of an animal rendered it more susceptible to the toxin.

7 Boiled queros extracts of fresh stools proved non-toxic when injected into animals.

8 Systemic blood from cases of acute intestinal intoxication as slightly toxic when injected into animals.

9 Portal blood from patients was very toxic.

10 No distinctive pathologic findings were seen in any of the fatal cases.

WALTER H. NABLER, M.D.

Gerlach W. Mechanical Injuries to the Mucosa Caused by Ascarides in Intestinal Obstruction Due to Ascarids (Ueber mechanische Schleimhautschädigungen durch Ascariden bei Ascariidenstau). *Deutsche Zeitsch f Chir* 93, 1919, 390.

A girl, 9 years old, who was operated on for cecocolic appendicitis (an area of beginning gangrene as large as pea) showed the signs of leuc and peritonitis four days after the operation. Laparotomy revealed diffuse peritonitis and marked distention of the small intestine which was partly bluish red. A number of ascarids lay in the small intestine immediately above the ileocecal valve. Beyond these the ileum was spastically closed. Numerous ascarids were found also throughout the course of the small intestine. About ten worms were removed from the site of the ileus by enterostomy. Death occurred a few hours later.

Autopsy revealed numerous worms in the small intestine. At the points where they were found

the mucosa was bright to dark red. In the upper part of the jejunum there were lesions of the mucosa extending into the submucosa. These consisted of longitudinal defects about 3 mm wide in the inner layers of the intestinal wall which resembled ploughed up furrows. The mucosa at the sides of these grooves showed no changes. On microscopic examination, the blood vessels in the reddened areas of the mucosa and submucosa appeared markedly engorged. The mucosa was infiltrated by numerous cells, and the peripheral portions were partly necrotic and partly exfoliated. In the region of the defects the muscularis mucosae had been completely destroyed and a part of the submucosa showed ulcerative destruction.

Both the injury of the intestine and the spastic ileus were caused by the ascarids. It could not be determined whether there was any relationship between the ascariasis and the appendicitis.

GUMPERT, (Z)

Osawa, E. P. Pathogenic Effects of the Right Colon. *J. Jap. Med. Soc.* 23, 1924, 73.

Most of the symptoms induced by colostomy are due to the dragging on the mesentery or pericolic membranes and the constant fecal stasis. The symptoms are many and multiform, but may be assembled into three general groups: pain, constipation and malnutrition.

The pain is of two types, that produced in the immediate vicinity of the colon and that produced by the dragging on other organs.

The success of treatment for all marked colostomies will be proportional to the patient's age and intelligence and his co-operation. The younger the patient subjected to colostomy, the more certain and rapid the cure.

Medical treatment should be tried first. This necessitates two or more weeks in bed in a hospital. Several times a day, with intervals of rest, and for an hour after each meal, the patient is placed in the Trendelenburg position on an incline of at least 30 degrees. So far as is possible he is not permitted to raise his shoulders from the bed at any time. An enema is given at least once a day. Meats and albuminous foods are withheld. The diet is made up chiefly of vegetables, carbohydrates, and fruits to retard the putrefactive bacteria and to aid the fermentative flora in the caecum. Lactose in liberal amounts has also been found of definite value for this purpose.

On leaving the hospital the patient is instructed to lie in the Trendelenburg position for at least twenty minutes after each meal and upon retiring. An abdominal support should be worn and should be placed in position while in the Trendelenburg posture.

The medical regime generally gives only temporary relief, surgery being necessary for a more lasting cure.

When the colonic wall has become infected and thickened and when pronounced lymphadenitis and

multiple adhesions are present, no operation short of right colectomy will give a cure.

In the presence of circum-mobility of mild degree fixation of the caecum coli to the root of the meso-appendix should always be done after appendectomy. It is Quain's conviction that this fixation of the caecum, accidental, accidental or intentional, has much more to do with the relief of symptoms after operation for so-called chronic appendicitis than removal of the appendix itself.

When the caecum and the ascending colon are both ptosed and hypermobile on a mesentery, more radical fixation to the psoas muscle is done. An incision is made through the posterior peritoneum opposite the normal location for the caecum and the caecum is fixed to the muscle with two or three chromo catgut sutures.

When most of the ascending colon is free and hypermobile a second peritoneal incision is made somewhat higher, over the edge of the psoas, and two other chromic sutures are introduced. A very solid fixation is obtained by placing the sutures in the posterior longitudinal line of the colon, but this is apt to cause considerable backache in the first few weeks after the operation and may in some cases result in too firm fixation in some cases.

When there is complete right coloptosis a still higher fixation is made at a point representing the hepatic flexure. It is not possible to effect the fixation to the back muscles because the kidneys, with their blood vessels and the ureter, is in the way. The posterior peritoneum is opened and two or three sutures are passed through the areolar tissue in front of the kidneys. If there is only a small amount of fat present the muscles near the twelfth rib are easily reached at this point. If there is an abundance of fat it has seemed best not to pass these sutures deeply under the peritoneum but to be satisfied with a broad peritoneal incision and to thrust under the liver.

When the right kidney is definitely ptosed with the colon, the fatty capsule is split open, the dorsum is peeled loose from the kidney. The tuft of fat thus freed externally but attached in front of the kidney pelvis is gathered together with two or three chromo catgut sutures and sutured firmly to the quadratus lumborum muscle. This forms a shelf upon which the kidney rests and is much better procedure than attempts to anchor the kidney itself.

The following is a brief summary of the results following colofixation. Twenty (6 per cent) of the thirty-six patients subjected to colofixation and coloptosis are free from all previous symptoms, and twelve (75 per cent) of the sixteen with complete colofixation are entirely symptom-free. The majority of the rest (about one-third of the total number) gain constipation as the symptom.

Which had not been entirely overcome by the operation. Four complained of occasional backache and three had colicky abdominal pains. More or less relief from previous symptoms as acknowledged by all but three. Not the least satisfactory were the

results in patients who were relieved of symptoms in other organs—kidney, gall bladder and duodenum—and upon whom the most radical and multiple interventions were performed.

The author summarizes his conclusions as follows:

Coloptosis is a very common anatomical abnormality.

Comparatively few of those who are coloptotic suffer serious symptoms as a consequence but the incidence of the condition is much greater than was formerly supposed.

Some of the effects of coloptosis are attributed to other abdominal organs which may in turn give rise to a new set of symptoms obscuring the original chief condition.

Medical treatment affords relief in most cases and should be given thorough trial in all cases although the ability to cure is doubtful in any case.

Surgical treatment is as successful in this condition as in many other so-called surgical diseases, and promises better results as experience accumulates.

Chronic appendicitis is an infrequent condition. The term should be restricted to those comparatively few cases in which there is actually a chronic lesion of the appendix.

CARL R. STUCKE, M.D.

Wetherbee, O. O. The Indications for and the Results of Anchoring the Head of the Colon. *California State J. M.* 9:3, 20, 69.

The author has often noticed that in certain cases of excruciating headaches there is an associated lowering and distention of the head of the colon. He therefore endeavored to determine whether this deformity was responsible in part, at least, for the discomfort. Intoxication resulting from colon retention is both local and general. The local effect is exerted upon the nerve endings in the wall of the bowel and interferes with afferent and efferent impulses, thus establishing the vicious circle of lessened mobility, longer retention, greater intoxication and continued lessened mobility. Of the general effects the most glaring is the violent headache.

In twenty-eight cases the author separated adhesions and cut all fibrous bands to liberate the colon so that it could lie without restraint and in contact with the parietal peritoneum in the right flank. There he secured it with a running suture uniting the lateral longitudinal band to the fold of the peritoneum at a distance of 5 or 6 cm. Taking care not to leave any channel between the new line of attachment and the mesocolon through which a hernia might develop. The results seem to be encouraging.

H. W. FINE, M.D.

Einhorn, M. Chronic Ulcerative Colitis and Its Treatment. *Arch. M. J. & Med. Res.* 9:3, 101.

Strauss attributes chronic ulcerative colitis to dysentery, but Coleman regards it as an infective

condition because of the febrile course, the prostration, and the septic complications.

In reviewing the symptoms, Finhorn describes the characteristic stools, the constitutional reaction, the protracted chronicity, and the resultant disability.

The diagnosis is based upon a stool examination and the subjective symptoms caused by the local condition. If the symptoms are atypical, the proctoscope and the barium enema are valuable aids.

With regard to the treatment, Finhorn outlines a diet containing very little cellulose. He advises abstinence from cold beverages, fruits, and salads, and the use of only small quantities of milk. Care must be taken to provide a diet of sufficient nutritive value.

In the medical treatment of the disorder it is important to use a medicine which will spread the remedy over long portions of the intestine. Finhorn recommends one to two teaspoonfuls of an astringent in agar such as tannin agar. *Iperacanthia agar* is indicated if the attack follows a smother dysentery and *lupulin agar* if there is colicky pain.

The local treatment consists of retention enemata. Irrigation of the colon through the rectum and irrigation through an appendicostomy or cecostomy opening. The latter consists of the operations mentioned by introducing an intestinal irrigation tube into the cecum through the mouth. This tube is left in place for one or three weeks during which time nutrition is also given by mouth.

A case in which this treatment as applied is reported. Six days after the introduction of the tube, the capsule was demonstrated in the cecum by the X-ray following inflation of the colon with oxygen. One hundred cubic centimeters of 5 percent mercurochrome solution are then instilled and ask calcium carbonate solution flushings are given by the dry method. Thus as continued until the evacuations are free from blood when the tube is removed.

The procedure is recommended because of its effectiveness and because it renders surgical operation unnecessary. V. F. DICK, M.D.

#### LIVER, GALL-BLADDER, PANCREAS, AND SPLEEN

HAAZ, W. The Bacterial Content of the Blood of the Portal Vein and the Origin of Liver Abscesses (Ueber die Bakteriengehalt des Pfortaderblutes und die Entstehung von Leberabszessen). *Deutsche Zeitschrift für Chirurgie* 9. Heft 39.

HAAZ first gives a historical review of the various theories regarding the bacterial content of the blood of the portal vein and comes to the conclusion that permeability of the intestinal wall may be assumed in the presence of severe processes in the mucosa. He then reports a few very careful investigations on living subjects and a large number of animal experiments. From these he concludes that under normal conditions the blood of the portal vein does not contain bacteria, but that when the

mucous membrane of the gastro-intestinal tract is involved by inflammatory or destructive processes conditions are entirely different. Bacteria can be taken up by the radicals of the portal vein also during any gastric or intestinal operation in which the wall of the vena is divided throughout its entire extent. The organisms so taken up, however, are always destroyed by the bactericidal power of the blood.

Under certain conditions bacteria may penetrate into the liver not only through the branches of the portal vein, but also by way of the blood stream through the hepatic artery—as, for example, in puerperal fever, suppuration of bone, influenza, furuncles, and carbuncles—or more rarely by way of the lymph streams.

The biliary passages are the most important carriers of infection. Certain kinds of bacteria acquire luxurious growth in the gall bladder and, especially when there is a decrease in the contraction of the biliary passages or a biliary stasis, enter into the liver. They may enter the liver also if the adjacent portions of the stomach and intestine are so injured that their walls become permeable.

VERMANN, (2)

Rehmann, A. E. Gall Bladder Diseases. *South Medical Journal* 75.

With reference to the etiology of lesions of the gall-bladder, the author points out that certain types of bacteria have a special predilection for the liver and biliary tract and at the same time certain percent are of these will involve the stomach and duodenum. This might explain the frequent association of the two types of lesions.

Allusion is made to the specific elimination by the liver of the colon typhoid group through the bile passages, indicating that gall bladder infection may be the result rather than the cause of repeatedly infected bile. Many organisms occurring in the normal bowel have also been isolated from the infected gall bladder, but the fact that the streptococcus mitis and streptococcus salivarius of the mouth are found twice as frequently as the streptococcus fecalis suggests that diseases of the upper tract are more often the precursors of gall bladder disease than are lesions of the lower bowel. A common source of infected bile is diseased liver cell.

Biliary lithiasis is often associated with hypercholesterolemia. A faulty liver cell may precipitate the cholesterol to form stones. There is decided increase in the cholesterol in the blood during the early months of pregnancy and in the convalescent stages of typhoid fever and other diseases. Persons with error in metabolism are apt to have stone formation.

Cure of gall tract disease is not difficult to diagnose. In the chronic type of case with few or no acute exacerbations, history of changes in the stool and flatulent dyspepsia, especially following the ingestion of fats, the presence of air in the stomach, heartburn, spastic constipation, dilation of the

occurs with spasm of the descending colon, and tenderness and distension of the gall bladder region are of diagnostic importance. Important indirect evidence includes fixation of the duodenum, deformities of the duodenal bulb, pressure defects, and fixation of the stomach at the lesser curvature. In many cases there is definite picture of pylorospasm. A roentgen demonstration of calculus is possible in less than 50 per cent of the cases.

Regarding duodenal intubation the author is of the opinion that it is impossible to obtain pure samples of bile or to disinfect the upper digestive tract. On the other hand he believes that separate fractions representing the ducts, the liver and the gall bladder may be obtained although they are not pure secretions. He states that the evidence of disease in the bile is similar to the information obtained by urinalysis, gastric analysis, spinal fluid examination. In studying the bile he considers the following factors: (1) change in color and consistency, (2) an increase in the cell count, (3) the presence of abnormal elements such as cholesterol crystals, (4) the presence of crystals of amino acids, leucin and tyrosin, and (5) evidence of profuse epithelial exfoliation and clumping of leucocytes. The serum test for obstructive jaundice is significant.

Infection and stone are both due to conditions outside of the gall bladder. The resulting phenomena the surgeon may be able to relieve or remove completely. Whether operated upon or not the case is medical first last, and always. A careful search must be made for primary focus of infection as most gall bladder infections are secondary. The intake of cholesterol, fat, and protein in the diet must be regulated.

The intestinal tract must receive its own viscous elements absorbed into the portal circulation. Some liver changes. Transduodenal lavage combined with the Murphy drop relieves biliary stasis.

Cases requiring surgical intervention are those in which there are recurrent acute attacks, spite of medical treatment, those with gross deformities in the right upper quadrant, those with common duct block, and those of persons of cancer age who do not show improvement under medical care.

WILLIAM J. FICKETT, M.D.

Griffiths, H. E. The Relation of Diseases of the Gall Bladder to the Secretory Function of the Stomach and Pancreas. *Lancet* 93 (1923) 205.

It has long been known that there is a close relationship between gall bladder disease and digestive disturbances. The close proximity of the duodenum, the gall bladder, the head of the pancreas and the pylorus makes it difficult in some cases to diagnose disease processes in these different viscera accurately. From an anatomical and physiological standpoint it is important to remember that from 50 to 90 per cent of normal persons have a peritoneal band or fold of peritoneum extending from the neck of the gall bladder downwards and to the first portion of the duodenum. The presence of such a band does not

indicate inflammatory disease of this viscus. The author reports one case in which contraction of the cystoduodenal fold due to cholelithiasis led to complete obstruction of the duodenum.

The vagus is the motor and secretory nerve to the gall bladder and bile passages, and the sympathetic from the ninth right intercostal segment is the sensory supply to the gall bladder. The vagus is the motor and secretory nerve to the stomach. The pancreas derives its nerve supply from both the sympathetic and the vagus. Inflammatory irritation of the mucous membrane lining of the gall bladder results in a reflex irritability of the gastric mucosa chiefly on the stomach and leading to an increase in both the amount and the acidity of the gastric juice associated with relaxation of the pylorus and egestion of food in the duodenum. If the sensory stimulus is greater, pylorospasm is the result of sympathetic reflex through the ninth thoracic segment.

Infection of the pancreas is very frequently associated with gall bladder disease. In the greater number of cases infection occurs through the lymphatics. As a rule the internal secretion of the pancreas is not markedly altered although there may be an increased amount of diastase in the urine.

JOHN W. NIXON, M.D.

Boileau, H. A Case of Idiopathic Cyst of the Common Bile Duct (Einzige Fall von idiopathischer Choledochocyste). *Deutsche med. Wochenschr.* 9, 1914, 38.

In rare cases an obstruction of the common bile duct results from congenital anomaly of the biliary passages. Usually there is valvular obstruction at the point where the common bile duct passes through the duodenal wall. The subsequently developing biliary stasis makes emptying impossible because the duct becomes changed to a large sac.

A case observed by the author was that of a girl, 5 years old, who had never been sick before. The onset of the condition was sudden with cramp-like pains. When the patient was admitted to the hospital her general condition was poor and she showed slight icterus. The right upper quadrant of the abdomen was somewhat distended. At first, slight improvement followed symptomatic treatment, but later there was relapse with colicky pains, vomiting and a rise in temperature to 38 degrees C. The stools were absolutely acholic.

The patient was then transferred to the surgical division, an echinococcus cyst of the liver being suspected. Operation revealed a tense, elastic tumor larger than a man's head which was partially adherent to the transverse colon and the duodenum and extended above to the under surface of the liver. It was impossible to find the gall bladder. The point of origin of the tumor could not be determined definitely because of the patient's poor general condition. The intestine was sutured to the abdominal wall, and three liters of biliary fluid were withdrawn. The resulting improvement in the general condition was only transient. At the stools

remained continuously acholic, second operation was performed. When the edge of the liver was raised the completely atrophic and fragile gall bladder was torn off. The biliary passages could not be found with certainty nor could the opening of the sac be discovered. Therefore an anastomosis of the lowest pole of the sac with the duodenum approximately 2 cm. wide was made. An excised piece of the sac all proved to be the wall of the biliary duct which had been changed by chronic inflammation. Four days after the operation the stools became colored for the first time. Four weeks later the patient was discharged cured.

This was undoubtedly a case of idiopathic cyst of the common bile duct which probably had its origin in a kinking of the common bile duct at its transition into the duodenum. A catarrhal inflammation was doubtless an additional factor in the obstruction, streptococci being found in the punctate of the sac. The diagnosis was made only at the time of the operation, as in the cases previously reported in the literature. Only surgical treatment comes up for consideration. The best procedure is the earliest possible choledochoduodenostomy. *Scans. (Z)*

Burnham, M. P. The Importance of Indirect Roentgen Findings in Chronic Infection of the Biliary Ducts and Gall-Bladder. *Am. J. Roent.* 1923, 2, 25.

In the early days of roentgenology the roentgenologist depended for information relative to biliary tract infection chiefly upon the visualization of calculi in the gall-bladder. Subsequently George showed the possibility and importance of demonstrating the diseased gall-bladder itself and called attention to other manifestations of infection. During the past few years the author has found the so-called indirect manifestations of duct and gall bladder inflammation of increasing value in the diagnosis.

These indirect findings are divided into three groups: (1) changes of form and position in the first and second portions of the duodenum, and (2) variations in the normal gastric physiology.

Change of form and position in the first and second portions of the duodenum are due mainly to pressure and adhesion fixures as cause cannot be excluded. These changes consist of clean cut indentations of the duodenal bulb, crescentic deformities, such as usually occur on the lateral or the inferior aspect of the bulb, irregular deformities of the bulb not of the crescentic type, and distortion in the course of the descending duodenum amounting in many cases to very marked angulation.

The changes noted in the normal gastric physiology are not nearly so decisive as those noted in the duodenum. They may be in the nature of spasm of the antrum with the secondary back flow of small or large amounts of the meal into the esophagus due to increased intragastric tension.

The technique employed is discussed briefly. Stress is laid upon the fluoroscopic examination in

the right oblique prone position at the angle which will best bring out the different parts of the duodenum. This angle varies in different persons.

In the differential diagnosis the presence of abnormal peritoneal bands has sometimes been confusing, but in general these structures have distinctive features quite different from those of lesions of the biliary system. Several cases of ulcer of the duodenum with old perforation resulting in fixation of the bulb and irregularity of contour not of the type usually due to ulcer has been seen, in which it was impossible to exclude a gall bladder lesion. Indirect findings have frequently demonstrated the presence of both ulcer and gall bladder disease.

ANDREW HARTING, M.D.

Abell, E. Surgical Treatment of Diseases of the Gall-Bladder. *South. V. J.* 1923, 17, 83.

Neoplasms of the gall bladder require surgical treatment, but are uncommon in onset and frequently not discovered in time for cure. Adenomas of the gall bladder are found today more often than formerly. These growths result from the irritation of infection or the pressure of stones.

The gall bladder is infected chiefly through the blood stream and the portal circulation. Infection by the latter route is evidenced by the widespread interlobular hepatitis found in many cases, and infection by the former route is proved by the fact that macro-organisms are often discovered in the walls of the gall bladder, even though the gall bladder contents are sterile.

In the other opinion the gall bladder cannot be dispensed with as readily as the appendix as it has definite function though at present this is not thoroughly understood.

Cases of gall bladder infection may be divided clinically into three groups: (1) those with acute inflammation, with or without cystic duct obstruction; (2) those with history of colic and reflex gastric disturbance; (3) cases in which there is no history of colic, but complaint is made of epigastric distress and digestive disturbances.

In the first group the indication for operation is obvious. The others must be cured for according to their particular requirements. Any gall bladder seriously diseased requires operation should be removed as in such case it serves as a focus of infection for the ducts, the pancreas, the myocardium, etc. The dilatation of the common duct following cholecystectomy is usually adequate drainage of bile from the liver. In prolonged cases disease of the ducts pancreas and liver is a complication, and as this overshadows the disease of the gall-bladder surgical treatment of the latter must be subordinated to treatment of the more grave condition.

In cases of common duct stone and jaundice it is usually safe to remove the gall bladder and employ common duct drainage. When septic cholangitis and liver abscess are present drainage and care to avoid unnecessary trauma are important. Prolonged jaundice greatly increases the operative risk.

Alkaline water should be given previous to operation and transfusion resorted to as an added protection  
WILLIAM J. PICKETT, M.D.

Friedleben, M. An Unusual Case of Spontaneous Rupture of the Spleen Curbed by Splenectomy (Ein durch Splenektomie gebührender seltener Fall von Spontanruptur der Milz) *Deutsche Zeitschrift für Chirurgie*, 1910, 45.

The patient, a man 27 years old who was at the front during the entire time of the World War, suffered slight attack of typhus, and subsequently had febrile entitis of six weeks' duration. Previously he had never been sick. Most important of all, he had never complained of pain in the bones. From March 10 to 14, 1919, he had slight inflammation of the throat but fully recovered. The rupture of the spleen occurred several days later while he was sitting in his office and was the cause of severe and prolonged hemorrhage. Splenectomy was followed by complete recovery.

At operation the liver was found of normal size. An intra-venous injection of camphor and sodium chloride solution after the operation had a striking effect. A pathologic anatomical diagnosis of leukemic spleen was made because of the changes in the tissues. The blood mass showed marked increase in the lymphocytes. The thrombotic process in the acute infection or an early peripneumonic process in the tissue controlling the blood. The course of the disease and the subsequent condition of the patient who was entirely well and one-half years after the operation speak against chronic leukemia. The author believes the condition was general infection with leukemia blood picture and corresponding reaction of the hematopoietic system. With the exception of the spleen the lymphatic tissues of the body were not involved. In December, 1920, one and one-half years after the rupture, the patient was subjected to an appendectomy. The blood picture at that time was normal.  
COLLIER (Z)

Van Strubenrauch, Surgery of the Spleen. Ligation of the Splenic Artery (Zur Milchirurgie. Die Ligatur der Arteria lienalis) *Deutsche Zeitschrift für Chirurgie*, 1922, 126, 374.

In the case of a 66-year-old man, who without had hemorrhages from the skin, the kidneys, and the intestine in November, 1920, the main branch of the splenic artery was ligated 8 cm. from the spleen after the second arrest of the hemorrhage. January 6, 1921. The course of healing was somewhat disturbed by singultus lasting for eight days and by slight suppuration of the abdominal wall.

Previous to the operation the blood picture was as follows: hemoglobin 3 per cent, erythrocytes, 1,200,000, leucocytes, 9,000, coagulation time 15 minutes, no myelocytes, and few ucleated erythrocytes. Nearly all of the normoblasts are stippled and the blood platelets were unusually few. Twenty-four hours after the operation the number of blood

platelets was about normal, and giant blood platelets, a larger number of isolated myelocytes, and isolated stippled erythrocytes were present. Seventeen days later the blood showed marked poikilocytosis and red pale blood discs, mononuclear leucocytes, and large number of blood platelets.

Since August 22, the patient has now followed his calling as office clerk, has had no more hemorrhages and has been free of symptoms. In July, 1921, marked poikilocytosis, only a few blood platelets and isolated Jolly bodies were found. On August 9, 1921, more than eight months after the operation the hemoglobin amounted to 90 per cent, the leucocytes to 4,400, the color index to 0.86, the erythrocytes to 5,200,000 and the leucocytes to 9,550. There were no abnormally altered erythrocytes, few blood platelets, and no Jolly bodies. The blood coagulation time was seven minutes.

On the basis of the case observed and the others reported in the literature Stabenrauch recommends the ligation of the splenic artery in place of extirpation of the spleen in certain forms of blood diseases. Necrosis of the spleen can be definitely avoided if the ligation is made distant enough from the hilus of the spleen.  
CUNNINGHAM (Z)

Foot, N. C. Studies on Endothelial Reactions. Changes in the Distribution of Colloidal Carbon Introduced in the Lungs of Rabbits Following Splenectomy. *J. Exp. Med.*, 1923, 39.

After splenectomy in rabbits, colloidal carbon introduced into the circulation is removed primarily by the lungs. Such compensation for the loss of the spleen indicates that the more carbon than that of normal blood.

The liver, bone marrow and peripheral lymph nodes show no marked alteration in their phagocytic activity as compared with those of controls. They do not compensate for the loss of the spleen.

The cells phagocytosing colloidal carbon in the lungs appear to be produced there, rather than in other organs, as under these conditions proliferation of the endothelium occurs chiefly in the lungs.

These cells remain in the pulmonary capillaries and lymphatics or are thrown into the circulation. In the latter case there is apparent increase in the number of macrophages in the lumina of the blood sinusoids, but nowhere else, indicating transference of carbon from the lung to the liver within cells.

It appears probable that these cells are destroyed in the liver and their content of carbon is taken up by the parenchyma, since the latter frequently contains carbon particles and shows mitotic activity.  
SAMUEL KARN, M.D.

## MISCELLANEOUS

Streck, W. M. Penetrating Wounds of the Abdomen. *Am. J. Surg.*, 1923, 26, 3.

This discussion is confined to abdominal penetrations seen in civilian practice and due to knives.



or bullet. Practically all such wounds are made in the close range.

Two types of cases are considered: one in which the abdomen is penetrated directly through the parietes (in these the diagnosis is apparent) and the other in which the penetration is indirect, the condition being only surmised from indefinite abdominal signs until laparotomy is performed.

Significant signs usually present are: hematemesis, suggesting stomach or duodenal injury; melena, indicating an intestinal lesion; bloody urine indicating causal or genito-urinary tract involvement; the escape of characteristic fluids from the wound and the protrusion of omentum or intestines.

Shock and hemorrhage are practically always present. Persistence of the former usually indicates the latter, which is suggested also by pallor, thirst, a thready pulse, and clammy skin, and sometimes by shifting areas of dullness in the flanks.

The author classifies these cases into five groups: Perforating wounds without intra-abdominal injury. Wounds of this type are rare. Uneventful recovery follows.

Hemorrhage in the absence of visceral lesions. This is practically always present and is directly dependent upon the severity of the laceration and the parts involved.

3. Perforations of hollow viscera. In general the intensity of the symptoms and the clearness of the physical findings are almost in direct ratio to (1) the duration of the condition, (2) the amount and virulence of the liberated intestinal contents, and (3) the amount of bleeding in the abdominal cavity. Persons with such injuries early show signs of shock, abdominal tenderness, and rectus spasm; later these signs are gradually overshadowed by the increasing manifestations of peritoneal irritation.

4. Injuries to the solid organs. Such injuries are complicated by lacerations elsewhere and are very unusual; the mortality depends upon the possibility of controlling the hemorrhage, which is generally profuse.

5. Massive hemorrhage. Persons with massive hemorrhage are practically moribund when they enter the hospital and most of them die within few hours.

A gunshot or stab wound of the abdominal wall is a sufficient indication for immediate exploratory laparotomy. The incision should be large and so placed that it most effectively brings into view all the supposedly involved viscera.

Solid organs are packed or, when possible (spleen, kidney, ovary, uterus) are removed if the hemorrhage cannot be controlled. Uterine tear through and tend to aggravate the condition.

Perforations of hollow viscera are closed with absorbable sutures. Resection is indicated for (1) multiple wounds within spaces of 8 in. (2) large tangential wounds, (3) injury of the mesenteric border, (4) gross injury to the blood supply

and (5) cases in which closure would cause definite obstruction.

A peritoneal cavity free from blood and intestinal contents can be left without drain but continued oozing and the obvious presence of intestinal material necessitate very free drainage.

An immunizing dose of tetanus antitoxin is given when the patient enters the hospital. He is then placed in a warm bed. Morphine is withheld until a diagnosis is made. After operation, morphine with atropine is administered generously and retention enemas of glucose and lukewarm are given. Paralytic ileus should be recognized early and vigorously combated. The diet should be increased as rapidly as possible and the patient gotten out of bed as soon as he is physically able.

The prognosis depends upon the structures involved, the amount of material which has escaped from the hollow viscera, the amount of hemorrhage, and the time which has elapsed since the injury.

C. CONNOR Y. VERN, M.D.

Rosenblyth J. L. The Diagnosis of Obscure Chronic Abdominal Conditions. *Am J M Sc*, 1935, 130: 30.

The exploratory laparotomy is falling into the disfavor, also gastro-enterostomy done in the absence of demonstrable lesion in the stomach. In the latter case, the true cause of trouble, the gall bladder or appendix, is often left and continues to cause symptoms suggesting ulcer. Moynihan has designated this condition, appendix dyspepsia. There are no definite attacks of pain and the pain is less severe than ulcer pain. Instead of food relief there is increased distress after food and after exercise. Vomiting is frequent. Flatulence and heartburn are the most distressing symptoms. In few cases there is vomiting of blood due probably to minute toxic ulcers or erosions in the stomach. Superficial rigidity of the right rectus muscle, about localized pain, or epigastric pain produced by deep pressure over McBurney point is an important sign.

Reflex symptoms from the appendix or gall bladder may cause pyloric spasm leading to gastric stasis and hyperacidity, toxaemia, fecal stasis, irregularities in micturition or cardiac disturbances. Reflex epigastric pain is common. Removal of grossly normal appendix often clears up the symptoms.

Mechanical interference such as that caused by adhesions around the gall bladder may embarrass gastric movements. Pericolic adhesions may cause intestinal torsion. The correct diagnosis may be established only by the occurrence of definite appendicular symptoms. A single series of X-ray examinations is often misleading. Frequently the appendix is diseased first, this condition being followed by associated disease of the stomach and gall bladder. The X-ray is of doubtful value except to rule out as actual gastric lesion.

Cholecystitis may be present without pain. In some cases complaint has been made only of back ache between the shoulders.

Epigastric hernia may produce similar symptoms but is very rare. It may cause vomiting or acute pain but rarely chronic involution.

Of 150 patients given a routine Wassermann test twenty-four had a positive reaction and of the latter six had undergone abdominal operations without benefit. The condition is often congenital.

CAROL E. JAMESON, M.D.

**Laeven, A. Segmental Localization of Pain Through Paravertebral Novocaine Injections as a Differential Diagnostic Method in Intra Abdominal Diseases (Ueber segmentäre Schmerzen aufsteigend durch paravertebrale Novocaininjektionen zur Differentialdiagnose intraabdominaler Erkrankungen). *Vorlesungen und Vorträge* p. 14, 14.**

In ninety cases of abdominal pain Laeven gave paravertebral injections of novocaine in order to determine the segmental localization of the pain. In gall stone colic the injection of 5 cm. of 1 per cent solution over the tenth dorsal nerve abolished the pain. The procedure proved valuable in both the diagnosis and the treatment.

It is found that in gastric cases an injection over the seventh dorsal nerve greatly alleviated the pain of pyloric ulcer. Renal colic was influenced by injection over the first and second lumbar nerves. Appendix pains were influenced by injection of the first and second lumbar, but not with certainty and not completely. The muscle spasm disappeared with the pain.

HARRIS (Z)

**Bente, L. R. Pneumoperitoneum as an Aid in the Diagnosis of Subdiaphragmatic Conditions. *J. Am. Med. Ass.* p. 3, 1923, 464.**

Since pneumoperitoneum was first used as an aid in roentgen ray diagnosis, much has been done to simplify the technique and a great deal of investigation has been carried out to determine the full possibilities of the method. While its application to the diagnosis of subdiaphragmatic conditions is not as wide as for that of conditions in other regions of the abdomen, a subdiaphragmatic lesion being limited, the information it gives is often decisive.

Saals reports the case of a young man who was admitted to the hospital with chills, high temperature, and pain in the back. A perinephritic abscess which was found on physical examination was incised and drained. The temperature then fell to normal. Drainage continued to decrease and at the end of the seventh day had practically ceased. On the seventh day the temperature again rose and daily and there were chills and profuse perspiration. Both physical and roentgenographic examinations revealed moderate collection of pleural fluid and embolectomy of the diaphragm on the affected side. All of the symptoms suggested involvement of the subdiaphragmatic space. Examination by pneumoperitoneum, however, proved that the subdiaphragmatic space was not involved and simple thoracotomy resulted in cure. The information

given by pneumoperitoneum therefore guided the surgeon his choice of operative procedure and led him to perform a much less formidable operation than at first seemed indicated.

Pneumoperitoneum may be of decision and also in cases of cricoidospasm of the lower end of the esophagus, adhesions of the viscera to the diaphragm and hernia of hollow viscera through the diaphragm.

GEORGE E. BENLEY, M.D.

**Cancet, A. Retroperitoneal Cysts (Delle cisti retroperitoneali). *Arch. ital. di chir.* p. 17, 48.**

Retroperitoneal cysts develop in the retroperitoneal space or connective tissue of the abdominal cavity. Cysts of partially or completely retroperitoneal organs such as the kidney, suprarenal capsule, and pancreas are excluded. Scaville or pedunculated cysts may be propagated into the retroperitoneal space from the organs mentioned and thence but the majority occur in the connective tissue in small structures in the connective tissue such as the blood vessels, lymphatics, an aberrant portion of the suprarenal capsule or pancreas, or an undevoted testis.

Cysts classify such cysts as follows:

Epithelial cysts (1) ectodermic origin (dermoid) (2) mesodermic origin (Wolffian body) (3) endodermic origin (enterocysts) (4) embryonal (teratoma).

Lymphatic cysts (1) simple (serous and chylous) (2) lymphangiomatous.

Pseudocysts (1) hematoma (2) serous (3) urinary (4) pancreatic (5) inflammatory (6) neoplastic.

Parasitic cysts.

Echinococcus retroperitoneal cysts are rare and of less importance than congenital cysts. They may be propagated from the pancreas, kidney, muscles, vertebral column, etc.

The author reports the case of a man 62 years of age who had had enlargement of the abdomen for long time. There was distinct tensely fluctuant swelling in the left epigastrium and flank. Bowel inflation, stomach palpation, and X-ray and urine examinations led to diagnosis of retroperitoneal cyst. At operation the cyst was found lying above and behind the spleen. Scur of the colon and forcing the small bowel into the right side of the abdomen. Five liters of turbid fluid containing flocculent material were withdrawn from the cyst. The thick cyst wall was freed from the colon, diaphragm, parietal wall, and kidney. The suprarenal capsule was not seen. The portion of the cyst wall overlying the aorta was left intact and the entire cavity manipulated to the abdominal opening. The cavity healed in eight days.

KALLIOPE SPENCER, M.D.

**Collins, A. W. Migratory Tumors of the Abdomen. *N. York M. J. & Med. Rec.* p. 3, 1923, 65.**

References in the standard textbooks and current literature to benign or malignant tumors of the

abdomen are few. The earliest case found in the literature was reported in 1860. With one exception, all cases reported were those of women. Campbell and Ower described a tumor removed from a man 69 years of age. This growth had been noticed for twenty five years and at operation was found to be free from any attachments. Its surface had the glistening appearance of fibroid, and on cut section the center was found to be calcareous and the surrounding tissue contained no clefts, cells, or nuclei.

The vast majority of the other tumors reported were found in women not operated upon previously. The growths were fibroids or ovarian cysts which had become detached and remained free in the abdominal cavity or had formed new attachments.

In one case reported a fibromyoma of the abdominal wall, evidently due to reimplantation at the time of operation, was found ten years after a hysterectomy for fibromyoma. Two cases of this type of tumor are reported by the author. In the first the tumor was attached to the colon and necessitated resection of a portion of the colon. The microscopic examination showed it to be a leiomyoma similar in structure to tumor of the uterus removed four years previously. In the second case five encapsulated tumors were removed from the anterior abdominal wall. Microscopic examination showed them to be cystadenomas. A previous operation had been done on this patient for the removal of papillary cystadenoma of the right ovary.

(E. BARNES, M.D.)

## SURGERY OF THE EXTREMITIES

### CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS ETC

Parh, E. A. Certain Factors Causing the Deposition of Lime Salts in Bone. *Dental Cosmos* 9:3 In 196

Marked and typical rachitic lesions have been produced in rats by the use of diets high in calcium and low in phosphorus. Photomicrographs of bone recovered from rats given treatment after the production of rachitis show almost complete recovery.

The treatment employed in the experiments was the well-established use of cod liver oil and sunlight. It was found that starvation also increased the amount of lime salts deposited in rachitic bones.

Fact explained by the assumption that the starving animal draws upon its body tissues for food, thus consuming its carbohydrates, protein, and fat and liberating the amount of phosphorus necessary for normal bone anabolism.

Röntgenograms of two of a set of quadruplet children demonstrated clearly the value of cod liver oil and actinotherapy (the ultraviolet quartz lamp). One of these children at the age of fourteen months was given cod liver oil for six weeks before the X-ray pictures were taken, while the other was given none. As a result a striking difference was noted in the bones of the forearms of the two children, the child given cod liver oil having fairly dense bones while its twin showed marked typical rachitis. Röntgenograms of the forearm of another baby (aged six months) showed a definite increase in the deposition of lime salts four weeks after treatment with the quartz lamp.

Emphasis is laid upon the advisability of including considerable amount of green food and milk in the diet of the pregnant woman and of the importance of giving babies cod liver oil and exposing them to direct sunlight and fresh air. Mention is made of the fact that ordinary window glass filters out the radiation of the sunlight which prevents and cures rickets.

Dwight W. Carr, M.D.

Bloodgood, J. C. Bone Tumors: Sarcoma, Periosteal Group, Sclerosing Type, Osteogenic, Methods of Diagnosis and Treatment. *J. Radiol.* 1913 IV 46

In cases of bone tumor amputation should be done without delay if permanent cure may be expected from it.

On the basis of the X-ray picture the author divides bone lesions into two main classes: (1) the central, and (2) the periosteal.

When the evidence is strongly in favor of malignant process no exploration is necessary if the decision is made to treat the case with radium and the X-ray. If amputation or resection is contemplated, expectant treatment diminishes the possibilities of cure.

The number of cures of periosteal sarcoma after amputation is relatively small.

The author cites cases of sarcoma involving the upper and lower end of the tibia, giving the detailed clinical history, X-ray interpretation, and treatment.

He emphasizes the importance of investigating localized pain in the region of joint or bone by means of the X-ray. This should include not only the area of pain, but also the corresponding bone or joint. A case of sclerosing osteogenic sarcoma is reported in detail.

The author recommends the examination of specimens removed at exploration by means of Terry's polychrome methylene blue, and urges the perfection of freeze section study of specimens.

MATTHEW BERENSON, M.D.

Kaufmann, C. Sprains of the Large Joints of the Extremities (Die Verstaechung der grossen Extremitätengeleite). *Schweiz. med. Wochenschr.* 1913, Nr. 37-774

Wrist Sprains of the wrist is the most common sprain of the upper extremity and the second most common of all sprains. The author agrees with Bardenheuer that the chief injury is sustained by the joint capsule. This is stretched much more often

that it is torn. In discussing the symptoms the author emphasizes particularly the facts that pressure is only slight, painful or not painful at all, and that closure of the fist is little disturbed when the hand and forearm are placed upon the table. An effusion into the joint is almost always present, but as this occurs also in fractures, fracture must be excluded by roentgen examination. If rupture or separation of the epiphysis, which is much less common, an effusion is not present, the swelling is less, and the pain is rapidly relieved by rest but not eased by massage. The possibility of the presence of previous changes in the wrist must be borne in mind, particularly a fracture of the radius (Madelung deformity) and chronic tuberculosis. The roentgenogram will give information regarding both of these conditions. Acute inflammations more rarely cause diagnostic difficulties.

The prognosis is good when proper treatment is given. Ankylosis seldom occurs. The development of tuberculosis does not result from a sprain, but sprains frequently light up a previously latent tuberculosis. The treatment consists of massage and the application of a warm, moist dressing until the effusion and the swelling disappear. In cases of old distortions the massage should be begun slowly. Work should be resumed as soon as possible, but delicate work should be prohibited for longer time. In the author's opinion the application of plaster cast is not justified and the effect of the cast band is often over-estimated.

**Elbow.** Sprains of the elbow are rare. In this condition also stretching of the joint capsule without complete tearing is the chief injury. The author has never seen ruptures of the joint ligaments and anodes in case of simple strain. Frequent deformities due to fractures in childhood were present before the accident causing the sprain. Previously present arthritis deformans and tuberculosis may give rise to diagnostic errors. Occasionally arthritis deformans is found in strong laborers of middle age without symptoms.

The prognosis is favorable. Healing requires about three weeks. The treatment consists of rest in bed for several days with the arm on pillow or in extension, followed by massage. Ambulatory treatment with triangular arm sling is not advisable.

**Radial humeral and radio ulnar joints.** Sprains of the radial humeral and radio ulnar joints are rare. Usually there is severe pain immediately after the accident, and pronation and supination are painful. The treatment consists in the application of compresses followed later by massage. In the author's opinion the recently described epicondylitis is the result of repeated sprains of these joints, and not rarely an occupational injury.

**Shoulder.** Sprains of the shoulder joint constitute from one-eighth to one-fifth of the sprains of the upper extremity. The causes are practically the same as those of luxations. Not rarely changes in the joint caused by acute articular rheumatism and

partial ankyloses due to previous injuries or chronic deforming processes were present before the sprain. In all new cases examination should be made for atrophy of the deltoid muscle changes in the other shoulder joint crepitation, and partial ankyloses. Tuberculosis may be fairly latent for a long time and suddenly become acute as the result of a sprain.

With the proper treatment, the prognosis is favorable. Treatment with the triangular arm sling as generally practiced and liniments are decidedly contraindicated. Every patient with a sprain of the shoulder should be kept in bed until active elevation and abduction of the arm to the fullest extent are possible. The upper arm should be raised to the level of the shoulder and placed on pillows in abduction. Massage should be begun on the third day. In cases of old ankyloses and those which have been massaged for a long time, treatment by extension bed may be successful.

**Foot.** Sprains of the foot are the most common of all sprains. In the majority of cases the metatarsal ligaments are stretched, complete ruptures are rare. The severe pains are caused by the effusion of blood into the tense ligaments. In general, bone avulsions are unusual in sprains, but a fracture of the external malleolus should be sought for.

In fresh distensions the best treatment is immediate massage. This generally relieves the pain at once by distributing the effused blood. After the massage compression bandage should be applied, and over this moist compresses. Bed rest is necessary. The patient may be allowed to leave his bed only when pain is no longer present in the morning. He may return to work in three to five weeks. Cases few days old and showing marked swelling generally require bed rest with elevation for 7 to 10 days. They should then be treated in the same way as fresh cases.

**Knee.** Sprains of the knee joint constitute about 6 per cent of all sprains and 8 per cent of the sprains of the lower extremities. Here again complete laceration or rupture of the ligaments occurs only in the most severe sprains, usually the injury is stretching and partial tear. The injury of the meniscus constitutes an injury in itself and as a rule is not associated with severe sprain. The cause of the sprain is any exaggeration of motion occurring normally in the knee. Any of the ligaments may be affected.

These injuries to the ligaments are frequently visible in the roentgenogram. Injuries of the lateral ligaments can be palpated directly. The diagnosis can be made if fractures can be excluded by the roentgenogram and injuries of the meniscus excluded by the history. Early aspiration is valuable in the diagnosis. An effusion of blood indicates fresh injury, the admixture of fat droplets fracture and clear or predominantly serous effusion in the first few hours. In addition to these signs such as thickening of the joint capsule atrophy of the quadriceps muscle etc. previous disease. The history is of little aid as chronic

1. Inflammation of the knee joint often has little effect on the functional capacity.

The prognosis depends first on the proper treatment. In cases of slight genu valgum the course is usually not disturbed but when there is marked genu valgum it is started. Not rarely a deforming arthritis results after the sprain, but if the joint was previously healthy this heals after a time. Marked aggravation of a previously present arthritis deformans as result of sprain is rare. Ambulatory treatment of fresh sprains of the knee should be discontinued. The patient should be kept in bed until movement has become approximately normal. The effusion should be aspirated on the inner side of the knee with a cannula 3 mm. thick. This joint should be completely emptied. After the aspiration warm, moist compresses should be applied. If necessary the aspiration may be repeated. After the cessation of the first pains, careful exercises and massage should be begun, particular attention being paid to the quadriceps muscle. If the patient is not allowed to get up until the return of approximately normal function he should walk energetically and with a fully extended knee about the end of crutches.

As a rule a complete cure results in three to six weeks if this is not the case serious lacerations of the ligaments or an arthritis deformans will usually be found. In such cases of this kind, motion should not be begun before four weeks, and extensive motions must be ordered. Limitation of motion persisting longer than one year after severe distortions is usually permanent. In chronic hydrops, aspiration should be done with careful search made for tuberculosis. This should be followed by a few days of rest with the application of compresses and treatment with energetic massage and movement only in very rare cases as the thorax compelled to resort to irrigation with carbolic solution. In arthritis deformans, massage is desirable as long as the extension of the motions improves. This condition often heals after a time if the patient is not too old.

Distortions of the hip joint are rare. The thorax has not as yet seen definite case. In young persons there is usually tearing of the epiphysis of the head or its complete separation. In older persons there is arthritis deformans. The treatment consists of rest in bed for three weeks with the leg in extension. DIXON (2)

Veilmann, J. On So Called Crepitation of the Scapula (Ueber das sogenannte Scapularcrackern). Allg. W. ch. 9, 255

In the vast majority of cases of crepitation of the scapula the condition is due to overhanging of the tumefied shoulder blade or small exostoses at its upper angle. Induration in the muscles (Jastram) and the appearance of pseudo-bony masses (Knetter) are usually secondary. When the anamneses are slight, as is frequently the case the development of crepitation is dependent upon the simultaneous presence of other changes such as

those resulting from trauma, scoliosis, or tuberculosis (shrinking processes in the pleura and lungs).

In severe cases the treatment should consist in the chiselling or clipping off of any bony prominences through longitudinal incision at the inner border of the shoulder blade or through a curved incision at the inner upper angle. Muscle plastic (Lothsen, McClure) may be followed by recurrences. In the cases of patients who dread operation, treatment by bandages may be considered.

Four cases are reported. In the one which was treated successfully by operation (a bony elevation was found at the inner upper edge of the shoulder blade close to its angle. The largest which was the size of a pea, produced noise by gliding over the second and third ribs. In the three other cases, in which operation was refused the condition persisted. BERNHARD (2)

Kappas, M. Snapping Shoulder and Voluntary Dislocation of the Shoulder (Schnappende Schulter und willkürliche Schulterverrenkung). Arch. f. orthop. Unfall-Chir. 9, 22, 335

In the author's opinion most voluntary dislocations of the shoulder are cases of so called snapping shoulder. In each there is no dislocation, but the head of the shoulder is drawn with snapping sound forward or backward under a stretched muscle bundle of the deltoid. This displacement is produced by isolated contraction of the muscles of the upper arm and shoulder blade or of the upper arm and breast.

Kappas collected thirteen cases. The shoulder snapped backward in ten and forward in three. One boy was able to snap his shoulder either forward or back, and in no case was any disease of the shoulder joint found. In many instances laxness of the capsule is assumed, but in the author's opinion this is not necessary for the abnormal movements as the capsule and peri-articular soft parts normally allow sufficient room for play.

As a rule treatment is unnecessary as this condition usually occurs in young persons in whom it disappears spontaneously in the course of years. True voluntary dislocations undoubtedly occur but they are rare and indicate the presence of marked change in the joint. In conclusion the author states that sort of snapping may be produced by condition in which the normal movements of the joint are inhibited by an intra-articular or extra-articular cause (catching of the greater tuberosity in a cleft between the short head of the biceps and the coraco brachialis muscle). BERNHARD (2)

Satta, F. Operative Treatment of Suprascapular Fracture of the Humerus in Children (Sul trattamento operativo delle fratture suprascapulari dell'omero nell'età infantile). Chir. d'oper. d'ortoped. 9, vi, 639

The author accepts Kocher's flexion and extension classification of suprascapular fractures of the humerus. He found only one flexion fracture (twenty

two cases of children under 12 years of age. These elbow fractures caused by extension are equivalent to posterior elbow dislocations in the adult. Anatomical reposition is followed by functional recovery.

The classical method of closed reduction is usually successful, but the fact that the forearm can be brought to a right or an acute angle does not necessarily indicate that reduction has been obtained. A controlling skiagram is required. A moulded splint is preferable to a circular cast as the latter endangers circulation. The period of immobilization should be reduced to from eight to fourteen days, an average of ten days, and should be followed by active and passive motions until full cure has resulted.

Opponents of this treatment fear new bone formation in the extravasated blood or myositis ossificans. Ambulatory splints and skeletal traction are not well borne by children.

Cubitus aris resulted in 25 per cent of the author's cases, and in more than 5 per cent late operation was done. In many cases the posterior and medial displacement of the distal fragment cannot be corrected even under anaesthesia, open operation being therefore necessary.

Six cases are reported. In some of them metalfusion was used. KELLGREN, SVEN D, M.D.

Giacomini, E. A Contribution to the Study of Rigidity of the Hand (Contributo allo studio della rigidità della mano). *Chir. d'org. e spec. univ.* 92, 666.

The author enumerates the various traumatic and inflammatory lesions of the hand resulting in rigidity. The success of treatment to overcome the rigidity depends on the cooperation of the patient. Hand rigidity is caused essentially by limitation of joint movement resulting from alterations in the articular cartilages and the capsular and other ligaments. Such rigidity differs from stiffness due to extra-articular causes in the muscles, tendons, and nerves.

Lesions which cause finger rigidity are direct injuries, such as contusions, sprains, dislocations, and intra-articular fractures, and indirect injuries due to wounds of the soft parts of the hand and forearm, lesions of nearby joint and nerve trunks, prolonged inactivity, and severe and longstanding infections, especially those of phlegmonous character.

The author reports four groups of cases due to (1) traumatic injuries with or without infection, (2) phlegmonous infections, (3) fracture of the forearm, and (4) uninfected fracture of os metacarpal contracture. KELLGREN, SVEN D, M.D.

Giamoratti, M. Coxa Plana and Tuberculous Osteitis of the Neck of the Femur (Coxa plana ed osteite tubercolare del collo femorale). *Chir. d'org. e spec. univ.* 92, 685.

The author reports a case of localized tuberculous osteitis of the neck of the femur in a 5-year-old child.

The progress of the disease is shown by five skiagrams taken over a two-year period. Although the leg was immobilized, flexion and restricted abduction were obtained. There was shortening of 1 cm. The skiagrams, however, show coxa plana instead of shortening of the neck and lessened neck angle. In 1909 Waldenström reported similar cases in which the healing of localized tuberculous osteitis of the femoral neck appeared as coxa plana.

KELLGREN, SVEN D, M.D.

Hase, Angiomas of the Capsula of the Knee Joint (Über Gefässstamoren des Kniegelenks). *Deutsche Zeitsch. f. Chir.* 92, 218, 30.

The author had occasion to operate on two cases of hemangioma of the capsule of the knee joint in which the history and findings were in marked accordance with each other and for this reason allow far-reaching conclusions regarding the prognosis and treatment of the condition.

The first case was that of a 30-year-old man who, since his fifth year suffered with pain in the swelling of the knee joint, which under the diagnosis of tuberculous, was treated for years by the application of plaster cast. The patient came under the author's care his twenty-third year. There was then an effusion in the joint and the knee could not be extended completely. Crepitation in the joint was noted but no palpable tumor. The roentgenogram was negative. There were extensive varices on the leg and in the popliteal space.

Operation revealed large varices in the fascia and the fibrous capsule. The joint was filled with angiomatous masses which covered the synovia everywhere. The cartilage and bones were intact. After the removal of these masses, healing with complete function resulted.

After 1 year the same symptoms recurred. At the age of 30 years the patient again requested treatment. Examination revealed moderate effusion in the knee, anasarca, and muscular atrophy of the leg. The roentgenogram disclosed bone changes.

Operation showed the spread of the recurrence to the joint ends. The joint was again filled with angiomatous masses, the patella was completely denuded of cartilage, and the tumor had ruptured into the bone and the condyles of the femur. After a careful excision of the angioma, during which cavity was found in the tibia and after removal of the capsule of the joint with all the recesses the bony portion of the joint was resected. Good consolidation and cure resulted. The histologic report was capillary and precapillary angioma of the synovial membrane.

The second case was that of a 2-year-old girl who since the time of her birth, had had several small tumors below the left knee, which gradually grew to the size of a bean. One of these was extirpated 5 years previously, but recurrence which caused marked lameness on walking developed immediately. At the time of the examination by the author a moderately movable, very sensitive tumor

the size of a walnut felt under the center above the patella on deep palpation, and below it in an area as large as the palm of the hand, a number of small bluish movable tumors. Motion of the joint was very painful. On roentgenoscopic examination nothing pathologic was found.

After the extirpation of the small tumors, the larger tumor was exposed. This fibrous growth, infiltrating the capsule, had proliferated through the fibrous capsule of the joint and invaded the synovial membrane in part. A portion of the joint capsule measuring 8 by 4 cm was resected. The rest of the joint was normal.

Healing occurred. There was no recurrence for nine months. The pathologist reported a system of thin walled, communicating, blood filled cavities enclosed by firm connective tissue and penetrated by thick walled blood vessels. Cavernous angioma.

In both cases the notable feature was the severity of the symptom. In the first case the tumor in the first case showed pronounced destructive tendency by attacking the cartilage and bones, but in this case this tendency had not yet developed. In the second case, the circumscribed tumor of the capsule as bone to rupture into the bones. Both tumors are congenital and, according to Ribbert should be interpreted as due to disturbances in fetal development.

The diagnosis of the non palpable tumor is difficult, especially is differentiation from tuberculous. According to Gangolphi and Sabourin an important diagnostic sign is the difference in the circumference of the hanging and the suspended knee. In the roentgen picture the absence of troph of the bone suggests the presence of tuberculous. In cases of circumscribed tumors the prognosis is favorable as regards function, even though large sections of the capsule must be resected. Laeven created the defect in such cases by free transplantation of fascia. In cases like the first one described radical relief can be given only by resection of the joint and extirpation of the entire tumor tissue.

J. MAYER (2)

Hellstroem, J. So-Called Osteochondritis Dissecans of the Knee Joint (Beitrag zur Kenntnis der sog. Osteochondritis dissecans im Kniegelenk). *Acta Chirurg. Scand.* 9, 1, IV 30.

Koenig, who established osteochondritis dissecans as a clinical entity denied its traumatic etiology. A definite solution of the problem of its etiology has not yet been reached. The author reports several cases as follows:

Case 1. The patient as a girl, 8 years old who fell on her left knee five years previously. This accident caused no swelling and she was not confined to bed, pain was only occasional. Subsequently repeated locking of the joint occurred and crepitation was noted on motion. The roentgenogram revealed small round splinter of bone of the inner condyle of the femur.

A median arthrotomy was done but no free joint bodies could be found. The anterior portion of the median meniscus was compressed and in shreds and as therefore extirpated. Histologic examination showed fibrous atrophy. As the symptoms remained unchanged after this operation, another roentgenogram was made. This revealed a broken off piece of bone. A second operation exposed a piece of cartilage as large as a thumb nail of the inner condyle of the femur which was separated from the rest of the cartilage by a slight groove. The sequestrum was removed but showed no histologic peculiarities. After the second operation there were no further symptoms.

Case 2. A laborer 25 years old complained of locking of the left knee which had occurred for one year. There was no history of trauma. Marked effusion in the knee was found. X-ray examination showed small piece of bone separating the inner condyle of the femur. Operation revealed small cavity in the inner condyle which was filled with a small piece of cartilage and bone. The pieces of bone were removed but appeared normal on pathologic examination. A complete cure resulted. At subsequent X-ray examination an entirely similar condition was seen in the right knee joint.

Case 3. A laborer 3 years old, had noticed the protrusion of hard body on the inner side of the right knee joint for eight days. There was no trauma and no locking. The joint mouse was demonstrable only in the roentgenogram. A corresponding defect as apparent on the inner condyle of the femur. The joint mouse was removed by operation.

Case 4. A laborer 5 years old fell on his left knee 10 years previously, but only recently had become unable to extend the knee completely. A distinct focus was found on the outer condyle of the femur. No pathologic lesion was discovered at operation. The findings of subsequent X-ray examination were the same but there were no symptoms.

Case 5. A laborer 9 years old, had had stiffness of the right knee for 9 years. A scaly roughness on the posterior aspect of the patella was noted on X-ray examination. Operation revealed small piece of cartilage and bone separating the joint. Histologically the specimen proved to be bone surrounded by degenerating cartilage.

This disease occurs most often in males in the third decade of life chiefly laborers. Its most frequent localization is the medial condyle of the femur. No case in which it is localized on the articular surfaces of the tibia has been reported. Occasionally both knee joints are involved. The condition occurs also on the head of the humerus and the head of the second metatarsal bone. An injury is often mentioned in the history but just as often no trauma is remembered.

The symptoms vary markedly. Occasionally the disease is discovered only accidentally. Pain on extension of the knee is a common symptom. If the joint body has been cause of the symptoms of joint mouse are those most prominent. According

1. Kirschner point locking may occur before the joint mouse is cast off and often is due to injury of the meniscus.

The condition is usually revealed by the roentgenogram and on direct inspection of the opened joint, but in some cases it may be overlooked even when the joint is opened. The roentgenogram is very characteristic. The cast off piece of bone lying in the depression resembles an egg lying in a bird's nest. After the piece of bone has separated the depression in the joint contour indicates the original site.

In numerous cases no pathologic anatomical changes have been found in the joint cartilage occasionally a difference in the color of the cartilage is the only sign of the disease focus. Shortly before the separation the surface still adherent to the bone is covered with granulation like tissue which usually contains the remains of bone. When the separation is complete the joint mouse becomes surrounded by cartilage. In the early stages the cartilage is histologically normal but later the cartilaginous process constantly increases the bone is neverly always necrotic. There are no signs of inflammation. It is incorrect to draw far reaching conclusions regarding the etiology from the histologic examination as the stage of the process in any particular case is not known.

Undoubtedly osteochondritis dissecans plays an important part in the origin of free joint bodies. The author reviews the most theories in detail particularly those of Barth, Hellstrom, and others. It is significant that on extreme flexion of the knee joint the patella meets with the lateral portion of the medial condyle of the femur just at the site of the osteochondritis dissecans generally appears below reaching the patella in this position must be transmitted immediately to the femoral condyle. In contrast to Barth Kappas assumes that spontaneous healing may occur occasionally. Hellstrom agrees with this view in the basis of his fourth case.

The process may be latent for years. Hellstrom attaches no importance in the traumatic etiology to severe trauma. Rather he is inclined to regard repeated slight trauma as responsible since in the beginning there is usually only partial separation. Slight trauma is often forgotten and therefore are not mentioned in the history. Ludloff's conception is to be rejected as osteochondritis occurs also at sites where no direct injury has been demonstrated. The author warns against applying the findings of Axtensen's experiments to investigate human joints.

I conclude Hellstrom states that many cases are overlooked even if operation as the average surgeon does not know the peculiarities of the disease. A important etiological factor he believes is an incomplete fracture caused by the pressure of the patella against the condyles of the femur. In some cases this may occur in the condyle of the femur and in others in the patella. A frequent finding the cartilage shows no fracture it is to be assumed

that as it is elastic, it can withstand trauma which break the more delicate subcondral bone trabeculae.

As a rule the treatment must be operative. Free joint bodies must be removed. If no symptoms have developed and if the process is discovered accidentally in roentgenogram there need be no hurry but generally an operation will be necessary ultimately. In cases of beginning arthritis an immediate operation is indicated. It is wrong to wait in every case until a free joint body has formed. With regard to the technique of operation the author recommends the median or lateral parapatellar incision in order to prevent a recurrence the still adherent portions of the cartilaginous focus must also be removed. The depression in the articular surface should be smoothed with the curette and freed of granulations. A careful inspection of the articular surfaces is important. Filling of the defect as with fat is not necessary. Without operation the prognosis is unfavorable as secondary arthritis is usually superimposed. After operation the prognosis is good.

An additional case is reported at the end of the article. The patient was a laborer 37 years old who had slight edema in the knee joint. There was no history of trauma. A small joint body was palpable in the lateral articular space, and in the roentgenogram a small splinter of bone was seen at the lateral border of the patella. At operation small free joint bodies of cartilaginous substance was found. There was corresponding slight depression on the outer femoral condyle and fissure 0.5 cm long on the posterior aspect of the patella. This portion was lying loose. The histologic examination showed the joint body to be cartilage which had separated into fibers. This case is important because there was simultaneous injury of the cartilage on the patella and that on the condyle of the femur.

Schwimmer (2).

Burcher, E. A Contribution to the Pathology (Arthritis Deformans) and Diagnosis (Arthro-Endoscopy) of Meniscus Injuries (Beitrag zur Pathologie—Arthritis deformans—und Diagnose der Meniscus Verletzungen—Arthroendoskopie). Beitr. Klin. Chir. 9, 1914, 39.

The first 100 patients subjected to cartilage operations at the Civil Hospital of Aarau (cases reported by Baumann) almost without exception resumed their occupations within eight to ten weeks. In one half of these cases full restoration of function could be assured 2 months after the operation. Since the report mentioned fifty additional cases have been operated. As Baumann ascribed an unsatisfactory result in a few of his cases to the presence of arthritis deformans, it is important to determine whether or not the cause lay in the operation itself. A careful review however showed that the extirpation of the meniscus played a subordinate part as the etiological factor in arthritis deformans.



Bircher undertook to approach the question from a pathological and anatomical aspect. In twenty of fifty cases of meniscus injury he removed a piece of cartilage, to 1 cm long and 1 cm wide, from the outer edge of the lateral condyle of the femur. At the same time a careful X-ray examination was made. In nine of these twenty cases the X-ray examination showed definite arthritic changes. In three the findings were questionable. Histologic examination showed arthritis deformans in thirteen, in seven the tissue excised was normal. Of the twelve diagnosed by the X-ray as arthritic, eight were found on histologic examination to be normal, while of the eight shown to be free from arthritis by the X-ray examination, seven showed advanced histologic changes. Therefore, in fourteen cases (70 per cent) the X-ray examination was of no value in the diagnosis with respect to arthritis deformans. Control examinations of postmortem specimens gave similar results.

From these observations it is obvious that one must be very cautious in making diagnosis of arthritis on the basis of an X-ray examination. Since in many cases removal of the meniscus was combined with arthritis, it must be assumed that the arthritis had been present before the injury and the question whether arthritic changes predispose to meniscus injury must be considered.

To make certain of the diagnosis, which is generally difficult to do, Baumann made an endoscopic examination of the knee joint. The knee joint was filled with oxygen or nitrogen by means of an apparatus intended for the production of artificial pneumothorax. It was then punctured with a trocar whose cannula was provided with a lens. Through this cannula the laparoscope of Jacobovitz was introduced. Most of the interior of the knee joint could be seen by this method. Twenty cases were examined endoscopically. In eight of nine cases of meniscus injury the diagnosis was confirmed. The endoscopic examination regularly showed pictures differing from the normal.

Arthro-endoscopy renders the joint visible and permits the recognition of degeneration. Its application to the shoulder joint, foot, and hip has been shown by experiments on cadavers to be impossible. Its use must remain confined to the knee joint. Tuberculous affections with destruction of the cartilage and granulation tissue in the joint do not permit examination on account of the diminution in the size of the articular cavity. On the other hand, the method was effective in establishing the integrity of the internal surface of the joint in suspected cases of incipient tuberculous. (Continued) (X)

Gammurati, M. A Rare Case of Hereditary Symmetrical Osteitis of the Lower Limbs (Di una raro caso di osteite simmetrica ereditaria degli arti inferiori). *Chir d'arte e monumenti* 9, 11, 66.

The author records skiagrams of a 7-year-old boy and his father who suffered from a condition involving the femora and tibiae which had a painful onset

and resulted in great bony thickening due to symmetrical new bone formation. Similar changes were found also in the bones of other members of the family through four generations. The condition is characterized by localization in the bones of the leg, multiplicity of sites, hereditary character, symmetry, lack of suppuration, and painful onset.

In the author's opinion the cause is either hereditary syphilis or Paget disease. Both the son and father mentioned had negative blood Wassermann reactions but the reproduced skiagrams are apparently those of syphilitic bone.

KILGUS SWED, M.D.

Wells, S. Functional Testing of the Lower Extremities with the Aid of Two Spring Balances (Funktionsprüfung der unteren Extremitäten mit Hilfe zweier Federwaagen). *Zentralbl f. Chir.* 1912, 112, 1406.

The normal person with symmetrical body structure instinctively assumes such a position as standing that the center of gravity of the body is exactly over the sagittal midline of the supporting surface. If such a person is made to stand with each foot upon a spring balance both scales will show the same weight.

In every case of organic disease of one leg, the load upon that leg is instinctively diminished, either reflexly because of pain or for static reasons. Therefore by weighing with two scales the extent to which one leg is favored the importance of certain deformities, the progress of the healing process after injuries, and the success or failure of certain operations may be judged.

The author cites the findings in pseudarthrosis of the femur, contractures at the hip and knee before and after treatment, congenital infantile paralysis, and sciatica. (Continued) (X)

Athensen, G. The Etiology of Koehler Disease of the Heads of the Metatarsal Bones (Die Ätiologie der Koehlerischen Erkrankung der Metatarsalköpfchen). *Beitr. Klin. Chir.* 19, 1911, 45.

In two resected specimens histologic examination showed wedge-shaped necrosis of the epiphysis in association with reparative processes. The author is opposed to the theory that the condition is due to trauma. He attributes it to embolic obstruction of the corresponding epiphyseal end artery by tuberculous fragments or fragments of non-virulent pyogenic cocci. The distal thickening of the shaft he believes is due to simultaneous emboli in the metaphyseal arterial branches causing serious inflammation of the bone. The local processes at the terminal joint in Koehler's disease with secondary arthritis deformans are similar to the formation of free cartilaginous-bony bodies associated with secondary arthritis deformans in the other joints, but in the latter condition the traumatic etiology is evident. (Continued) (X)

## FRACTURES AND DISLOCATIONS

Lorenz, A. A New Method of Treating Irreducible Acquired or Congenital Hip Dislocations. *Arch M J & Med Rec* 1913, cxvii, 30

The author recommends his so called bifurcation operation and reports the results he has obtained with it. He believes this operation is indicated especially for old ununited fractures of the neck of the femur, instability of the hip due to tuberculosis, acute infections, or acute arthritis, old painful congenital dislocation of the hip and pathologic dislocation following typhoid, osteomyelitis, and other similar conditions. It gives a stable movable hip and is to be preferred to the Gant osteotomy.

PHILIP LEWIS, M.D.

Ashley, A. D. The Lorenz Bifurcation Operation. *Arch M J & Med Rec* 1913, cxvii, 36

Although congenital dislocation of the hip, ununited fracture of the neck of the femur and coxa vara have different etiology, the disturbance of function is similar in all three. In the three conditions causing similar functional disturbances should be similar or identical treatment.

In the three conditions mentioned the pelvis is no longer propped up by the bony pillars of the femur but is merely suspended by the upper parts by soft and yielding tissue—the capsule and the pelvic trochanteric muscles. When subjected to undue strain, especially in adults of considerable weight, these soft parts become painful.

The author describes the bifurcation operation which consists in making an osteotomy below the trochanter and displacing the lower fragment so that it will occupy the position of the normal head in the acetabulum. He emphasizes the point that the osteotomy is a procedure primarily to replace the position of the substitute head.

The indications for operation are inability to walk or severe pain. Ashley does not divide an operation for cosmetic reasons but states that the cosmetic results have been very good.

The technique of operation is given briefly as follows:

The patient is placed upon his unaffected side with the affected thigh slightly flexed. A long incision, about 15 cm long, is made through the skin and muscle, exposing the outer surface of the femur. A broad chisel is then applied to the bone so as to make an oblique line of fracture extending from the anterior aspect posteriorly and distally. The upper extremity of this cut corresponds to the upper level of the acetabulum. A complete osteotomy is performed. When the fracture is complete, the lower fragment is manipulated as in the reduction of congenital dislocation of the femur by the closed method. After the fragment has been thoroughly reduced it is forced inward and upward into the acetabulum. It is then held in position by the abduction

of the lower fragment. The limb is then placed in plaster in abduction at 35 degrees.

The patient is allowed out of bed in two weeks and may then begin standing or walking with crutches. After six weeks the plaster cast is cut and knee movements are begun. The cast is removed at the end of three months. The after treatment consists of massage and active and passive movement of the pelvic trochanteric muscle.

PHILIP LEWIS, M.D.

Deutschlander, C. The Treatment of Old Congenital Hip Dislocations. (*Die Behandlung der erkrankten angeborenen Hüftgelenkverrenkungen*). *Deutsche m d H. klinische* 1913, cxviii, 476

The treatment of old congenital dislocation of the hip is difficult because of the complications which develop not only in the hip joint itself, but also in the back and the loins. Frequently, high-grade lumbar lordosis is present, especially in cases of bilateral luxation. Aside from purely symptomatic and mechanical measures, such as massage, hot air, exercises and the use of belts, consist in the treatment consists of non-operative measures to effect reduction, which are applicable to a small group of cases and operative reduction in larger group. The author discusses these methods of treatment briefly and then speaks of the radical operation he advocates in 1901 in which the iliopectus is utilized in buttonhole mechanism. In thirty cases operated upon by this method there was marked functional and anatomical improvement.

On an anatomical basis, cases must be divided into two groups: those with complete concentric implantation of the tendon and normal motion, and those with eccentric tendon implantation and somewhat limited hip motion. In two-thirds of the cases of children between 8 and 15 years of age a concentric tendon implantation was accomplished. In those more than 15 years old only eccentric implantation could be accomplished. So far there has not been a single fatality.

The radical operation is a serious procedure but its danger should not be overestimated. The best treatment is the bloodless method of Lorenz, carried out in the proper age. *Loewitz* (7)

## SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC.

Girdlestone, G. R. Some Points in Reconstruction Surgery. *Practitioner* 1913, cxi, 456

Cases of injury due to war wounds, or accidents may be divided into (1) those in which treatment is obviously needed, and (2) those in which careful consideration is necessary to determine what if any treatment should be given.

The author cites the case of a man who had good use of thumb and two fingers of hand which was partially paralyzed. Although some improvement could be hoped for after operation and treatment

requiring year time it is considered best to do nothing as the man was able to perform his work well in spite of the paralysis.

In determining what to do in a given case the author suggests that the surgeon put to himself the following questions: (1) At what result you aim at? (2) How far will you succeed? (3) Is it worth while?

The result to be achieved is maximum function. Form is of secondary importance.

In judging and treating such patients, surgical knowledge, technique and ability are necessary and in addition (1) a study of the case from all angles, including the patient's occupation; (2) the power to recognize the essential points of disability which may not be the most obvious; (3) the ability to judge of the probable end results of the various methods of treatment as regards the patient's ultimate health, activity, freedom from pain, and fitness for work.

The patient is better able to decide with regard to treatment if he realizes the tedium of the various stages and the end result expected.

MARCE HOBART, M.D.

**Schwartz, F.** The Anatomical Processes in the Regeneration of Tendons and in the Plastic Repair of Tendon Defect by Tendon, Fascia, and Connective Tissues: An Experimental Study (Ueber die anatomischen Vorgänge bei der Sehnenregeneration und dem plastischen Ersatz von Sehnenlücken durch Sehnen, Faszien und Bindegewebe: Eine experimentelle Studie). *Deutsche Zeitschrift für Chirurgie* 9, circa 30.

The author first gives an interesting historical review of the question of the healing of tendon wounds. As the result of recent investigations Rehn claims that function is necessary not only to maintain the vitality of the transplanted tendon tissue, but also for the regeneration of the tendon and tendon-like tissue. Bier on the other hand assumes that the ultimate cause of regeneration is a chemical stimulation due to hormones which exert their action from the tendon stumps. According to Bier the tendon tissue has an unusually great capacity for regeneration.

By means of experiments the author attempted to determine whether a tenotomized or partially or completely extirpated tendon regenerates when the peritenon is intact or when it is completely removed. Thirteen experiments answered the first question in the following manner:

When the peritenon remains intact, replacement tissue forms in the defect which functionally takes over the part of the deficient tendon but in the course of time in contrast to normal tendon becomes stretched, so that the function of the foot gradually becomes poorer. The tendon cells themselves are in no way concerned in the growth of the new tendon; the new formation of the tendon originates in the peritenon. In the first three months the new formation is completed. The new tissue never shows the silver glaze of normal tendon. The

new tissue is a replacement tissue which is controlled by function. There is no true regeneration.

In the second large series of experiments the peritenon was carefully removed. As a result, connective tissue strand was formed which consisted of large vessels, nerves, and vascular connective tissue transformed into tendon-like strands. When function was entirely excluded by division of the nerves, cicatricial connective tissue was formed in the tendon defect by granulations just as in any other wound. A suitable arrangement of fiber-like strands, such as were seen in the former experiments, was not observed.

These facts indicate the great importance of function in the formation of tendon replacement tissue. In general, I do not know the primary cause of healing in a wound. There is no doubt that chemical changes play an important part but I do not know their nature.

The experiments show also that there is no transformation of connective tissue into true tendon tissue; the newly formed tendon is and remains replacement tendon. The author gives emphasis to the fact that it is function alone which can produce tendon-like tissue from connective tissue which will serve the purpose of a replacement tendon.

The rest of the article treats of transplantation experiments with tendon tissue. It is important that the peritenon be transplanted with the tendon as the new formation of the tissue proceeds from the peritenon after it has become accustomed to its new surroundings. Here again, function plays an important part as it renders the newly formed tendon tendon-like. The transplanted tendon itself undergoes destruction and is replaced by cicatricial tissue; hence, the majority of cases becomes firmly united with the surroundings and excludes the possibility of function. In contrast to this, the transplantation of fascia by Kirschner's method is to be highly recommended. The transplanted fascial tissue is for the most part maintained and the fascia remains glistering. Very good replacement tendons may be formed from such fascial tissue. The use of other connective tissue for tendon replacement in the form of braided tufts of connective tissue is less desirable.

KOENIG (Z)

**Isola, G.** The Plugging of Bone Cavities with Free Transplants of Fat (Zur Füllung von Knochenhöhlen mit freitransplantierten Fett). *Deutsche Zeitschrift für Chirurgie* 9, circa 386.

The plugging of bone cavities with free transplants of fat was first attempted by Makhsas and Krabbel. The three patients operated on by Makhsas were recently examined by the author after ten years. In the first and second cases, which presented closed tuberculous foci in bone, the process healed in a very short time but complete replacement of the implanted fat tissue by bony substance did not occur. In the third case (chronic osteomyelitis) no traces of bony defect were demonstrable.

A similar operation was performed in twenty-two cases at the Garre clinic. Krabbel reported ten of

them in 1913. Of the remaining twelve cases seven were treated more thoroughly. The result varied.

In general, it may be said that replacement of the implanted fat tissue by bone does not occur when the postoperative course is completely reactionless, but that slight inflammation causes complete disappearance of the bone cavity after a time if the plug is intact. The plugging was particularly useful in cases in which neighboring joint was opened during the operation or it was necessary to remove parts of the joint. H. A. (2)

Lempert, F. A Method of Facilitating Plastic Operations on the Deltoid Muscle (Zur Fächerung der Deltoidemusculatur). *Zeitschrift für Chirurgie* 9, 1917, 68.

The outer third of the clavicle having been resected, the portion of the trapezius muscle which is here inserted is freed and drawn over the acromion as far as the middle of the deltoid muscle where it is secured with silk sutures. The periosteal sheath of the clavicle is then joined to the periosteum of the humerus. The mechanical result of the resection of the clavicle is lengthening the lever-arm of the muscle as such as to suggest that in similar cases shortening of the clavicle might be freely carried out on principle even when there is no limitation of motion in the joint. There is no deformity of the projection of the acromion. In the author's opinion lateral fixation of the acromion to the opposite side might give still greater strength by drawing on the normal shoulder. VALLENTIN (2)

Schultz, O. E. New Arthrodesis of the Shoulder (Neue Schulterarthrodesis). *Revue Médicale* 41, 1917, 9, 1, 5.

The author has devised the following method of arthrodesis of the shoulder joint.

The skin incision is made from the middle of the spine of the scapula to the articulation of the acromion process with the clavicle and from here distally to 6 cm below the acromion process. The capsule of the joint is then opened by longitudinal incision and the head of the humerus is luxated. The head of the humerus and the glenoid cavity are denuded of their cartilaginous covering and the subacromial bursa is excised. With a rasp the periosteum is reflected from the upper surface of the acromion process over an area 3 cm wide and 5 cm long and also to like extent from the under surface. Three parallel cuts are made in the head of the humerus, extending from the posterolateral to the antero-medial aspect. A two saw with blades set apart is used. The segment of bone limited by these three cuts is cut out with a chisel from its base at a depth of 3 1/2 cm. Into this furrow the stripped acromion is inserted whereupon the head of the humerus comes to lie in the glenoid cavity. Immediately after the operation the scapula firmly united with the humerus could be moved up and down.

The advantages of this method are:

1. The freshened surfaces coming into contact are considerably larger than those formed by other methods.

2. The musculature of the shoulder girdle remains entirely uninjured; the trapezius is bound strongly not only to the acromion process, but also to the humerus.

3. The desired degree of abduction, elevation, and rotation for the arthrodesis can be obtained by varying the length of the incision in the head of the humerus. KIRCH (2)

Wreden, R. Partial Endoneural Resection in the Treatment of Spastic Contractures of the Hand in Infantile Hemiplegia (Partielle endoneurale Resektionen zur Behandlung spastischer Contracturen der Hand bei infantiler Hemiplegie). I. band. d. R. *Chir. Pflügk-Ges. Petrograd* 9.

Starting upon the assumption that spasticity and loss of function of the hand can be traced primarily to preponderance of the motor impulses in the median and ulnar nerves over those in the radial nerve the author attempted so to reduce the tension of the transverse incision in the former that there could be no destruction of the motor and sensory fibers such as occurs in Stoffel's operation. The median and ulnar nerves were exposed in the middle third of the forearm, the perineurium was divided, and elliptical pieces 5 to 6 mm in length and one half the diameter of the nerve in width, were resected from the nerve trunk. The slit in the perineurium was then closed with fine catgut.

Immediately after the operation the hand assumed position midway between flexion and extension. In the course of two weeks active flexion again appeared but during period of observation.

From six to ten months it did not reach its former strength and there was no essential improvement in function. With the exception of less acute perception of pain in the ulnar nerve area and temporary paresthesia of the palmar surface of the hand on movement, loss of sensation was not noted. Physiotherapeutic massage was begun toward the end of the first month. Up to the present time three children have been operated upon.

The objection made by Gurgoloff in the discussion of this paper that such elliptical excisions cause serious changes, is not of much practical importance as the defect made is small and the intervention too conservative. On the other hand, regeneration takes place slowly enough to permit an increase in function of the opposing muscles.

R. Kitaki stated that insofar as the motor fibers are sacrificed, Wreden's operation is more radical than Forster's, since the paralytic components increased.

Gurgoloff commended Wreden's purpose to strengthen the opposing muscles. By way of precaution he warned of the temporary character of the result and the possibility of neuroma formation.

Hess expressed himself as against Wreden's proposition because the motor fibers are destroyed.  
VON DER ORTEN-SACKEN (2)

Rahm, H. The Morestin Plastic for Contractures of the Fingers (Die Morestinche Plastik bei Fingercontracturen) *Berl H. Chir. 92*  
1922, 14

The procedures devised up to the present time for the treatment of contractures of the fingers are not satisfactory. The tendon transplantation of von Harder is too complicated, the silk tendons of Lange often do not heal in a disarticulation is a deforming process. Morestin's procedure is as follows:

The very abundant skin present on the flexor surface of the fingers, which may even form a web, is split longitudinally into two layers and transverse incisions are made in both of the folds of the web alternating right and left, until all tissue hindering the extension of the finger has been divided. If the finger can then be completely extended the small triangular skin flaps formed are alternately reflected back over the wound surface so that a triple serrated line of incision is formed. The flaps are fixed in position by a few sutures. A dressing is then applied and the finger immobilized for about eight days. At the end of this time bandaging and frequent motions, first passive and then active, are begun. If it is necessary to divide a tendon which has been encased in the contractural mass the finger is grasped by a neighboring finger during closure of the fist and carried along into the palm of the hand.

Three cases in which this method was used successfully are reported. LÖNNMARK (2)

Schulz, O. E. Peri Articular Fixation of the Knee Joint (Paraartikuläre Fixation der Kniegelenke) *Chir. Zeit. Berl. 9* 1922, 926

To immobilize the knee joint in cases of complete paralysis of the legs, the author proceeds as follows:

A longitudinal incision 6 to 8 cm in length is made on the inner side of the knee joint. The soft tissues are incised down to the periosteum of the

femur and tibia. The fibrous capsule of the knee joint is divided, but the synovial membrane is carefully avoided. The periosteum is incised and a strip 1 cm wide is elevated. With chisel, a groove 1 cm wide and 1 cm deep is made in the femur and tibia along the entire length of the incision. A graft from the tibia, corresponding in shape to land in this groove and the periosteum and fibrous capsule are sutured over it. Another splint from the tibia is placed in the same way on the outside of the knee.

In two cases the technique was more simple in that the middle portion of the fibula is utilized only on the lateral aspect of the knee joint.

In every case firm bony union resulted and is still present six months later. This method gives firm and more lasting results than immobilization by means of tendon fixation. KROCK (2)

Epstein, G. The Question of Operative Procedures for Congenital Deformities of the Foot (Zur Frage chirurgischer Eingriffe bei kongenitalen Fehlbildungen) *Verhandl. d. Russ. Chir. Gesellsch. 925*

For the correction of club foot Epstein favors atypical wedge excisions. In the discussion of his paper Albrecht stated that those who adhere to bone operations in cases of club foot underestimate the element of traumatic osteoporosis which makes it possible, when limited partial correction has been achieved in the second stage to obtain complete correction with the greatest ease in weeks later. Orten-Sacken stated that the indications for the treatment of club-foot formulated by Kocher forty four years ago are still correct. He laid down the rule that tenotomy of the Achilles tendon should be resorted to only after satisfactory adduction has been obtained and supination still makes necessary. Pathological anatomical studies demonstrate the impossibility of obtaining a quick cure in such complicated deformity. In the orthopedic clinic of Turner the difficult refractory cases are treated by edge incision supplemented by corrective orthopedic measures.

VON DER ORTEN-SACKEN (2)

## SURGERY OF THE SPINAL COLUMN AND CORD

Hackembroch, M. Congenital Curvature of the Spine as an Itra-Uterine Deformity of Weight Bearing (Beweg zur kasuistik der angeborenen Rückenkrümmung als intrauteriner Belastungsdeformität) *Arch. f. orthop. Unfall-Chir.* 92 22, 566

Congenital curvatures of the spine are generally divided, according to their etiology into those of endogenic origin, the result of germinal variations, and those of exogenic origin. The latter are intra-uterine deformities of weight-bearing and must be differentiated from cases in which the deformity was caused by intra-uterine disease. The exogenic scolioses are in the minority. Boeckh considers

every habit scoliosis retarded congenital form.

The author reports three cases of congenital curvature of the spine, two cases of scoliosis and one case of kyphosis, which were produced entirely exogenously by intra-uterine pressure. There are no bony formations in the vertebrae. All of the three cases are further characterized by resistance to treatment with the plaster bed. BUNICK (2)

Milner, W. J. Fracture of the Spine with Cord Involvement. *J. Bone & Joint Surg.* 9 3 222

The indications for operative interference in fracture of the spine cannot be delimited sharply. Laminectomy is indicated in injuries resulting in damage

to the cord either through crushing or through complete severance or by intra- or extra-dural hæmorrhage or oedema. Injury of the cauda equina should be treated in the same way as injury to peripheral nerve, operation being performed if there is disturbance of function.

Fracture of the bony column without cord involvement should be treated by the application of bony splint or plaster jacket or both. If careful mapping of sensory changes within two or three hours shows increasing involvement of sensory function operation is indicated. As shown by Allen time is an important factor and definite course should be mapped out at least within the first twenty-four hours. It is only in lesions of the cauda equina that late operation for cord damage may be of some use. Allen showed also that when dogs were subjected to identical crushing injuries of the cord those treated by median longitudinal section within a few hours of the injury to combat the oedema recovered function while the others did not.

The laminectomy performed by Mixt is that advocated by Gsemien. The muscles of the back are dissected away from the spinous processes and laminæ on one side only. The spinous processes are then cut away from the laminæ with a forceps, being left attached to the muscles on the untouched side. The laminæ are removed with rongeurs and all bone chips are preserved for future use. The various procedures indicated in given cases such as the removal of clot or in driven fragments of bone are now carried out. The articulations, if not already destroyed are crushed and bone chips are laid between the rumps of the laminæ on both sides. The muscles are sutured to the interspinous ligament and the fascia and skin are closed.

D. VID R. TELSON, M.D.

Turner H. An Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection  
*Brit. M. J.* 9 3, 4

Involvement of the spine in the typhoid process probably takes place during the flourishing period of the disease, and doubtless is not very rare. The symptoms of this complication may pass unnoticed on the background of the general picture of the illness. Typhoid spondylitis is a form of subacute inflammation involving the periosteum, ligaments, and vertebral articulations. Gibber's term, "peri-spondylitis," is the most suitable to describe the pathologic changes.

Chiefly the posterior lateral parts of the laminæ are involved, their mobility probably influencing the exacerbation of the process.

The picture of typhoid spondylitis as revealed by the X-ray is very characteristic. There is narrowing or partial disappearance of the intervertebral spaces with lateral protrusion of the contiguous edges of the bodies. Dense vertical shadows on one or both sides of the midline spread over the bony bridges of newly formed bone by which the posterior parts of the column are fused together.

Occasionally there is a scoliotic curve due to asymmetrical disposition of the disease.

Clinically the symptoms of infectious spondylitis differ markedly from those of Pott's disease. Acute excruciating pain in the back is the chief complaint. Digital pressure reveals intense pain in the lateral parts of the spine. The soft tissues of the region involved may be thick and oedematous. An intermittent fever generally accompanies the initial stages of the process.

The involvement of the spine in the typhoid process is a frequent integral part of the disease, the infection persisting in a latent state. The awakening of the process is generally brought about by trauma. Therein lies the explanation of the development of typhoid spondylitis long time after recovery from the original disease.

The author reports a case of typhoid spondylitis in which there was suppuration. This is the only positive case known in which suppuration complicated the spinal affection. SAMUEL KANEY, M.D.

Hodgmann, V. A Propping Operation on the Vertebral Column. Thoughts on the Operative Treatment of Spondylitis (Eine Osteoplastikoperation der Wirbelsäule. Gedanken zur operativen Behandlung der Spondylitis). *Zentralbl. f. Chir.* 9 22, 443.

On both sides of the vertebral column a rib with periosteal and vascular flaps is placed in the trough over the joints of the transverse processes of the ribs to form bony union. In addition a dorsal prop is raised in such a way that a free rib transplant is laid into the angle between the arch and the spinous process.

The operation is carried out in two stages, one side being operated on at a time. The use of anaesthesia and the local application of adrenalin to prevent hæmorrhage from the musculature and nerves are advisable. The vertebral column does not lose its anatomical support through the removal of the ribs. BOER (2)

Leri, A. On Lumbar Arthritis. *Ann. J. Chir. Med.* 9 3 222, 3.

By lumbar arthritis Leri means the localization of chronic vertebral rheumatism in the lumbar vertebrae. This affection which was frequent during the war produces symptoms very different from those hitherto recognized as characteristic of chronic vertebral rheumatism.

The patients are usually between 30 and 40 years of age and enter the hospital on account of lumbago or sciatica. Usually this condition is unilateral, but it may be bilateral or alternating. Complicated by made of sharp pain both continuous and paroxysmal, in the lumbosacral region, and often also in the buttocks and thighs. Sometimes the pain is limited to the calves.

The posture is variable. Only rarely does the patient stand erect. As a rule he bends his body forward and holds his knees flexed. He may also

bend either to the right or to the left. Sometimes there is a slight puffiness, without actual oedema, redness or heat in the lumbar region. The bony protuberances are merely obliterated. When the patient bends forward there is an accentuation of the line of the lumbar spaces and above this a depression. In the normal person there is a continuous arch. This sign is almost pathognomonic. There is little or no contracture of the lumbosacral muscles.

When lying extended on bed, the patient is able to stretch himself with perfect ease so that his head, pelvis, and feet touch the plane of the bed.

The roentgenogram shows sinking, a transparency and especially an excessive grooving of the vertebral bodies with enlargement of the superior and inferior surfaces (*vertebrae en diabeles*).

Sometimes a tapering of the surfaces and a sort of piruet beak is noted. Such is very characteristic and sometimes more or less oluminous nodules of neo-ossification, thickening of the cartilages and abnormal undulation of the vertebral borders are found.

Anatomically there is an osteophytic proliferation. Frequently this is cross-shaped.

The malady progresses by repeated attacks, each lasting 6 to 10 months and followed by apparent but incomplete clinical recovery.

The disease is evidently not due to lues, tuberculosis, or gonorrhoea. Rheumatic spondylosis has no relationship to it whatever.

In Leri's opinion the cause is to be found in the abnormal living conditions to which soldiers are subjected in active warfare. Often they sleep on damp ground or in the water and in the trenches they rest their backs against freshly turned earth. Frequently the muscles of the back are extremely exerted by long marches and the carrying of heavy packs. Temperature seems to play little if any part.

The disease can be readily distinguished from functional disorders by the definite deformity and by the X-ray findings. A knowledge of the nature of this condition and its mode of evolution is of importance with regard to medico-military decisions.

The treatment is the administration of salicylate of sodium and immobilization. The author shows the postural and body changes by numerous plates.

CHARLES F. AUSTIN, M.D.

## SURGERY OF THE NERVOUS SYSTEM

Punasepp, L. Transplantation of Spinal Nerve Roots in Flaccid Paralysis (Geber Transplant von Rückenmarksnervenwurzeln bei schlaffen Lähmungen). *Fachber.* 9, 443.

Punasepp undertook to transplant the nerve roots in four cases of infantile paralysis in which most of the muscles, for example, of the whole lower extremity were paralyzed and in which orthopedic procedures were ineffective. After laminectomy he cut through the roots of the second, third, and fourth lumbar and the eleventh and twelfth dorsal nerves and sutured the second and third lumbar nerves to the eleventh dorsal and the fourth lumbar to the twelfth dorsal. In these cases movement could be observed along the previously paralyzed lower extremities and the circumference of the extremities was increased. In the cases in which the legs had been paralyzed two years or longer, the results were uncertain. In one case the injury of the cauda equina, Punasepp sutured the central portion of the cauda equina to the twelfth dorsal nerve. After two months, incontinence of urine ceased. Punasepp believes that restoration of function undoubtedly takes place and that technically the operation is entirely practicable. *McKENNOR (2)*

Lehmann, E. P. Per Arterial Sympathectomy. 4. *SWG.* 923, LXVII, 30.

In the dog, the perivascular sympathectomy of Leriche does not result in the physiological changes in the extremity noted by Leriche in clinical cases. Vasodilation resulting from proved total sympathectomy does not affect wound healing.

H. A. MCKENNOT, M.D.

Halestead, A. F. and Christopher, F. Per-Arterial Sympathectomy. *J. Am. M. Ass.* 913, LXX, 77.

Dilation of the cervical sympathetic nerve causes dilation of the blood vessels of the eye, on the one side. Stimulation of the peripheral end of the nerve causes vasoconstriction and blanching. The sympathetic nerves pass through the adventitia of arteries to form plexuses in the peri-media.

Leriche observed that pinching the external layer of blood vessel causes the vessel to contract, arrest its pulse and decrease its size. If the external layer is excised, the diminution in size progresses to one fourth or one third the normal size. After three to fifteen hours secondary signs appear: (1) elevation of the local temperature from 3 to 3.5 degrees, giving subjective sensation of heat; (2) elevation of the arterial pressure possibly as much as 4 cm. of mercury; and (3) an increase in the amplitude of the oscillations. After per arterial sympathectomy the vasodilator reaction is transitory, becoming attenuated from the fifth to the sixth day and disappearing after from three to four weeks.

In Leriche's operation the artery is isolated for 3 to 5 cm. the sheath is divided, and with one part held with the forceps, the tunica adventitia is dissected away with knife or cannular sound until the vessel is completely denuded. Leriche has performed the operation fifty-four times on the following indications: cyanosis or similar syndromes, eleven cases; painful atrophy, 1 case; contractures following trauma, nineteen cases; extensive traumatic oedema, four cases; trophic ulcers, one case; tachymyoelectric, four cases; trophic ulcers on stump, one case; trophic ulcers after ven-

section, ten cases a sore on the heel after medullary injury, one case varicose eczema, one case trophic disturbance after frostbite, one case spasmodic paralysis, one case to modify the pressure of the cerebrospinal fluid, three cases Jacksonian epilepsy, two cases puerperal one case intermittent claudication, one case and erythromelalgia, one case.

In Lencbe's opinion, periaarterial sympathectomy is often very efficacious in the relief of pain, will influence symptoms of muscular hypertonia, and is beneficial in trophic disturbances leading to ulceration.

The authors report the employment of periaarterial sympathectomy for endarteritis obliterans associated with pain and numbness of the right foot in a patient aged 55 years. The pain radiated to the calf of the leg and the ankle was weak. The patient was unable to walk more than half block at a time. For four days and nights the pain became so excruciating that sleep was prevented. The right foot is painful when manipulated, and to a less extent the right calf was painful on palpation. The urine contained faint trace of albumin and few hyaline casts. The Wassermann test was negative. The patient was not benefited by treatment with Locke's solution, sodium citrate, potassium iodide, sodium bromide, chloral hydrate, nitroglycerine, thyroid extract, sodium nitrate.

Periaarterial sympathectomy was done on the right femoral artery at the juncture of its middle and lower thirds. The adventitia was stripped completely off for a distance of 5 cm. The patient was discharged from the hospital on the thirteenth day after operation. As a result of this treatment he is able to work on his feet for nearly twelve hours a day as cashier in a restaurant, and can walk miles or more. He has only slight pain when he walks rapidly and the numbness has practically disappeared. The leg is warm and tactile and thermal discrimination is normal.

WALTER C. BURKET, M.D.

Callender, G. L. Arterial Decortication. 4 Surg. 9:317, 1915.

Lencbe has called attention to certain definite results which follow the removal of the sympathetic nerve plexuses which lie in the intimal sheath and adventitia of large blood vessels. These structures were surgically removed from the femoral artery by Jaboulay. His successful results in cases of perforating ulcers of the foot, and less successfully from the coracal trunks in certain visceral disturbances. The technique is as follows:

The main arterial trunk is exposed by the classical route of incision, considerable distance proximal to the part affected. The external fibrous sheath covering the artery is then incised for a distance of 8 to 10 cm. and the artery with its inner and more intimate sheath and its adventitia is exposed. This inner sheath which is fused with the adventitia of the artery is grasped with tissue forceps and incised directly on the vessel wall. Traction is maintained

on one of the lips of the sheath of filmy tissue thus isolated, and this structure completely freed from the artery over the length of the incision with a knife and fine scissors. In this manner the artery is stripped of its external coat, together with the fibrous tissue adherent to it.

The immediate consequence of the denudation of the artery is a diminution in its caliber which progresses until the artery assumes the appearance of a small whitish cord suggesting a nerve trunk.

Lencbe constantly found postoperative increase in the surface temperature distal to the decortication. He stated that this was noted once on the evening of the operation but more often on the following morning. Usually however it occurred thirty-six hours after the operation and marked the onset of vasodilation. In most of the cases reported the local hyperthermia disappeared about the fifteenth day after operation.

Lencbe reported also constant postoperative rise in the systolic pressure distal to the point of operation. This has not been confirmed by the author.

Lencbe has cured traumatic disorders of the B. Banks-Froment type in which there are contractions and paralyzes and the complete picture may present muscular trophic exaggeration of the knee jerks, changes in the cutaneous reflexes, and disturbances in objective and subjective sensibility. Vaso-motor secretory and trophic disturbances are noted in the bones, skin, hair, and nails.

Another rare but well recognized clinical picture which has yielded to arterial decortication is the causalgia of Weyl-Mitchell.

Certain ulcers which occur in impetigo, tramps over areas not subject to pressure and which are not caused by infection are very refractory. According to Lencbe several ulcers of this type have closed promptly after decortication of the femoral artery and their scars have remained sufficiently resistant to bear the use of apparatus.

The author reports a series of arterial decortications which were performed on six patients. In one case three arteries were decorticated for disease of three extremities while in another the operation was performed on two arteries for disease in two extremities.

Group 1 included patients in whom the arterial changes at the time of operation were thought to be spasmodic rather than obliterant as evidenced by the presence of palpable peripheral pulsation of the artery. Group 2 included cases in which an obliterant arteritis seemed to be the most important factor and no arterial pulsation in the affected extremities was noted. Group 3 included one case in which the cause of the pain could not be determined.

In three cases in Group 1 no improvement followed the operation.

In the second group of cases, one definite cure was obtained. This patient had an ulcerated gangrene of the dorsal surface of the middle toe of the left foot. Several weeks after the operation the gangrene



disappeared and the sloughing healed into a resting scar.

In the one case of Group 3 operated upon for unaccounted for pain in the thumb the pain disappeared. H. A. McKENZIE, M.D.

Tyler, W. J. The Surgical Treatment of Chronic Sciatica. *A South African Medical Review* 9, 1914, 693.

The surgical treatment of chronic sciatica described is based upon an article by Renton. Ninety-nine cases have been treated in this manner with successful result in practically all. The operation is to be used only in true cases of sciatica and after medical treatment has been tried. If the sciatica is due to a lesion of the spine, sacrum, hip joint, or other structure, these conditions should be cured. In certain cases the pain is due to a perineuritis which often is combined with neuritis with adhesions binding the nerve to the surrounding tissues. It is this type of case upon which the author operates.

A classification of the cases based on the clinical condition is as follows: (1) cases in which pain occurs only during exercise; (2) cases in which there is some pain during rest and intense pain during exercise; (3) cases with moderate and irregular pain either at rest or during exercise.

In cases of Type 1 in which the inflammation has subsided but adhesions are present the author operation should give a cure in 100 per cent.

The operation demands free incision from the gluteal fold downward, exposing the nerve as far as the extent of the pain. The nerve is hooked up with the finger but not stretched. The adhesion is removed.

ing it is carefully dissected away either with the scissors or a scalpel, or with the probe and the fingers. No nerve branches are cut. The nerve is then carefully returned to its bed, the muscles are adjusted in place, and the skin is sutured. The patient is kept in bed three weeks and discharged at the end of four.

The author reports nine cases. Eight are completely cured. The ninth, which is recently operated upon, is still in the convalescent stage.

MARCUS H. HOWART, M.D.

Semmler, R. Cavernous Angiomas in the Peripheral Nervous System. (Über ka. cavern. Angiome am peripheren Nervensystem). *Deutsche Zeitschrift für Chirurgie* 91, 1914, 65.

Although cavernous angiomas are found frequently in the central nervous system, only two such neoplasms in the peripheral nerves have been reported. The author reports a case in which the tumor had its origin in the blood vessels of the posterior tibial nerve.

Angiocavernomata originating in the peripheral nervous system owe their origin to a malformation of tissue, viz. strangulation of an embryonic vascular branch in the endoneurium and perineurium. They are of interest only because of their situation. Pathologically anatomically they are ordinary angiocavernomata. Their rarity is due to the extraordinary regularity of the intraneural blood vessel formation which makes strangulation of the capillaries extremely difficult. The excision of these tumors is complicated by their intimate connection with the nerves, which usually must be resected. HUNTER, C.

## MISCELLANEOUS

### CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Glass, E. Tissue Necrosis Due to an Ink Pencil. (Zur Intenstität Gewebenekrose). *Deutsche und Österreichische Zeitschrift für Chirurgie* 91, 1914, 383.

In 9 Erdheim reported nineteen cases of tissue necrosis caused by ink pencils. In this article Glass reports two cases.

Case. Four weeks before he consulted Glass the patient had had a fall on the forearm. This was followed by swelling which did not recede. When an incision was made a violet fluid escaped. The incisional wound closed, but four weeks later protrusion as large as half walnut developed on the forearm, there was considerable swelling of the surrounding tissues, and the patient's general condition became poor. Methyl violet was demonstrated in the bandage materials. The patient knew nothing of an injury from an ink pencil, but on examination of the wound a broken piece of such pencil as found in the necrotic cavity. The entire wound cavity was thoroughly excised. Uneventful healing resulted.

Case. In this case the broken-off piece of ink pencil was removed immediately but the injury caused necrosis of tissue, lymphangitis, and deterioration of the general health. Healing followed opening and débridement of the wound and the application of a 1 per cent alcoholic solution of triplavin.

The injurious factor is believed to be the methyl violet. The tissue necrosis tends to spread. The effect upon the general health is striking. The process of healing is very slow. SCHWARTZ, C.

Von Balogh, E. A Contribution to Our Knowledge of Noma. (Zur Kenntnis der Noma). *Deutsche und Österreichische Zeitschrift für Chirurgie* 91, 1914, 74.

The author gives a brief report of thirty-two cases of noma observed in the course of 100 postmortem examinations carried out during the past three years in the Department of Anatomy at the St. Ladislav and St. Gerhard Hospitals in Budapest. A high percentage of cases coming from the subjects of undernourished children from poor families.

The majority of the subjects were under 15 years of age, but the disease is found also between the eight

cent and twenty fifth years. Twenty of the subjects were girls. The localization of the condition was variable but it involved almost exclusively the large orifices of the body and the surrounding tissues. In fifteen cases it remained a completely isolated affection of the cheek. Mucositis was most often the primary disease (twenty two cases). pneumonia and infectious intestinal catarrh were occasional causes.

The striking feature in the histologic findings was due to thrombosis of the blood vessels and changes of varying degree ending, in the most severe cases, in advanced gangrene was the failure of a defensive reaction in the apparently intact adjacent tissues.

By use of the original bacterial flora from cases of noma (a mixed infection of *spirochetes* and *fusiform bacilli*) the above succeeded in producing the changes in excised muscles which greatly resembled true noma. The presence of fusiform symbiosis suggests weakness of the cells brought about by the primary disease. *HOWES* (Z)

Paul, M. Observations on the Origin, Curation and Treatment of Rodent Ulcer. *Med J Australia*, 9, 3, 85

While the etiology of rodent ulcer is still indefinite it is a significant fact that although the lesion may occur in any part of the body it usually appears on the face, more especially its central horizontal third. The sites of predilection are the eyelids, especially the inner and outer canthi, and the nasolabial grooves. As this region of the face is also the site of predilection of nevoid growths of an embryonic nature it is possible that stimulation or irritation of such tissues may lead to the formation of rodent ulcer. Not only so but also the actinic ray of the sun may be factors in the production of retrograde changes.

Rodent ulcer may arise from the basal cell layer of the epidermis or the corresponding portion of the pilosebaceous structures as nevoid growth in which the germ or seed is present in the basal cell layer and lies dormant until acted upon by certain stimuli. It may develop also from immature pilosebaceous structures or from another nevoid growth such as mole. The neoplasms vary in appearance depending on whether the cell rest is destined to form a hair follicle, a sebaceous gland or a combination of these. When it is destined to form a hair follicle, the growth is characterized by closely packed cells somewhat rounded and sharply circumscribed masses, devoid of a marginal palisade layer above a cells of spindle shape. Sebaceous gland structure is indicated clinically by large reddish masses (usually on the nose) and histologically by reticular arrangement. There is also a combination of the solid or budding type with reticular arrangement.

A neoplasm may originate in the epithelium of pilosebaceous follicle or the basal portion of the surface epidermis as the result of traumatism or the effect of the actinic ray of the sun.

The treatment consists of irradiation with radium or the X-ray and excision. Radium is indicated in almost all cases and gives good results except where bone or cartilage is involved. Diathermy may also be of service but accomplishes little that cannot be achieved with radium.

H. W. FINE, M.D.

McConnell, G. A Case of Multiple Myeloma. *Law J Med Sci*, 9, 3, 184

This case report is particularly interesting in that the multiple myelomata occurred in a patient presenting clinically a pseudo phlebotomy syndrome. Postmortem microscopy seemed to prove the diagnosis of multiple myeloma although the patient, negro 50 years old, had stated that he had both chancre and gonorrhea thirty years previous. The aorta as dilated and calcareous the papulae were irregular and unequal. It had reacted sluggishly to light, a slight tracheal tug had been noted. Soft areas were found in the sternum, clavicles, humeri, skull, cervical vertebrae, ribs, clavicles, scapulae, femora and thighbones as enlarged.

No mention is made of the treatment of the chancre thirty years before but repeated blood Wassermann tests, one spinal Wassermann test, and the Lange colloidal gold test were negative. Bence Jones proteins tests were repeatedly positive, thus doing weight to the differential value of this test in the presence of myelomata.

The external distribution of the tumors, which was typical and their characteristic absorption of lime salts from areas of the bones in which it was possible that the calcareous deposits in the elastic membrane of the aorta and large arteries, the lungs, spleen and pancreas resulted from derangement of the calcium metabolism due to the excess of calcium available from the involved areas.

The patient died eight months after the beginning of his disability. The urine had contained large amounts of albumin for some time previously and the kidneys contained calcareous deposits and were found sclerotic and fibrosed.

Microscopically the tumors showed two types of cells—one having round or oval nucleus staining deeply and surrounded by narrow zone of cytoplasm and the other larger with larger nucleus, and surrounded by large amount of cytoplasm which appeared cloudy. Mixed with these cells were multilayered clear megakaryocytes and mononuclear cells with granular eosinophilic protoplasm.

DREW W. CARR, M.D.

Bierlich, R. The Function of Connective Tissue in the Experimental Production of Cancer (Ueber die Bedeutung des Bindegewebes bei der experimentellen Krebsbildung). *Arch f path Anat Physiol*, 9, 1909.

The question whether arsenic, lactic acid, and the X-ray can initiate or cause an increase of definite pathological growths is considered in three experiments. For the purpose of this study experimental cancer produced by trioxanthene was chosen.

It was established that through the administration of arsenic, and later of a combination of arsenic and tar a distinct delay in the appearance of benign superficial growths of the epithelium (an average of eighty days) and of malignant deeper growths (an average of one hundred and thirty-one days) was brought about. Neither an increase in the virulence of the transplanted tumor nor an acceleration in the formation of the experimentally produced tumor resulted from the use of lactic acid.

The effect of the X ray here the same as those appearing after arsenic and in the first stage of the cancer namely swelling of the epithelium, edema breaking down of the skin and subcutaneous tissue and, later, marked increase in the elastic fibers, especially in the papillary body. In contrast to changes caused by the irritants named, these occurred in a few minutes.

The increase of the elastic fibers is caused by a saturation of the indifferent fibers with elastin their regeneration in such a short period of time is precluded. This effect of the X ray corresponds to the first stage of tar-nematode and X ray cancer in which the elastic fibers are greatly increased in number as long as the epithelium has not grown into the connective tissue. In the second stage when this is the case, the elastic fibers are almost entirely absent. It may be assumed that saturation of the elastin saturation is caused by the cancerous tissue.

Two stages may be recognized in the change in tissue resulting from the use of tar (the X ray) and arsenic. In the first there is an increase of certain epithelial functions. Accompanying this there is a decrease in the formed elements of the connective tissue especially those adjoining the epithelium. This depends upon a physicochemical change in the protoplasm of the connective tissue. In the second stage diametrically opposite development takes place, namely breaking down of fat as previously accomplished. The elastic fibers gradually shrink, the connective-tissue fibers are greatly twisted or are separated into thick cylinders. This also is caused by change in the physicochemical structure brought about by cancer.

The fact that irritants such as tar the X ray and perhaps arsenic, influence particularly both the epithelium and the connective tissue is a valuable addition to our knowledge of the development of experimental cancer. HOMER (2)

Lang, F. J. and Krainz, W. Cystic Osteoplastic Carcinoma as Compared with the Adenocarcinoma (Ueber das cystische osteoplastische Carcinom im Vergleich zu seiner verdichteten Form). *Frankfurt Zeitschr. f. Path.* 9, xxviii, 506.

This article reports on detail 1. cases of osteoplastic carcinoma of bone which was primary in the prostate. The first case showed the usual picture as described by von Recklinghausen. The portions of the skeleton which are most concerned in the mechanism of bodily movement, the vertebral column and the ribs, very marked changes were

found and there was preponderating bone apposition due to the irritation of the nests of carcinoma cells, proliferating in the marrow spaces. There was also congestion of the blood vessels of the bone. Bone destruction was present, but did not keep pace with the increased new bone formation.

The prostate belonging to the second case was lost in the confusion due to the war but the fact of its tumorous degeneration is certain. This case was remarkable in that cystic formations, arising greatly in size, were found in the interior of the involved bones, but especially under the periosteum. There were also subchondral cysts in the femoral heads. Microscopically the cavities consisted of dilated gland lumina in the neoplasm. The author explains these formations on the basis of the great activity of the carcinoma cells, such as turn is due to the plentiful blood supply the patient being only 27 years old. In the same way he explains the chiefly subperiosteal and subchondral situation of the cysts. BROOK (2)

Altmeyer, P. J. Parathyroid Hyperplasia and Bone Destruction. I. Generalized Carcinomatosis. *Surg. Gynec. & Obst.* 6, 3, xxviii.

The patient, woman, 49 years of age, had been operated upon for carcinoma of the breast eighteen months previously, was admitted to the hospital complaining of considerable pain in the back and showing evidence of metastatic cancer throughout the entire skeleton. Examination of the blood revealed 5,000,000 red blood cells, 5,000 white cells, and a hematocrit content of 8 per cent. Smear showed poikilocytes and normoblasts. The urinary findings were negative.

Autopsy revealed tumor metastases in the bones and spine and the cranial and sternal bones. The left inferior parathyroid gland measured 30 by 5 by 3 mm. and as yellow firm and separate from the thyroid gland. Sections through the tumor showed extensive destruction of bone, its replacement by a large number of cancer cells, chiefly by the formation of Howship's lacunae. In other areas there was an extensive formation of osteoid and fibrous tissue.

The outstanding difference between this case and the usual type of bone lesion found in secondary cancer, as the complete absence of calcification in the newly formed osteoid tissue. The author suggests the term osteomalacia carcinomatosa to describe the condition.

On section, the parathyroid tumor showed hyperplasia and like the parathyroids, cells of moderate size with large nuclei and a narrow cytoplasmic zone. Sections through the pituitary gland showed destruction of the posterior lobe and the intermediate zone by tumor growth. The anterior lobe was intact. The author calls attention to the fact that the entire destruction of the posterior lobe did not cause any change in the output of urine.

Osteomalacia has been found associated with hyperplasia of the parathyroid glands, but the

extensive bone destruction in carcinomatous has not been considered heretofore in this connection. As in the case reported there was hyperplasia of the parathyroids and at the same time an entire lack of calcium deposit in the newly formed tissue, the author considers the hyperplasia of the parathyroid glands a fruitless attempt of the body to compensate for the calcium deficiency. In conclusion he states that the parathyroid glands should be examined in all cases of bone metastases.

WILLIAM J. PICKETT, M.D.

## BLOOD

Guthrie, C. G. and Huck, J. G. On the Existence of More Than Four Isoagglutinin Groups in Human Blood. *Bull Johns Hopkins Hosp* Balt. 9:3 1930 37

The authors briefly outline the history of the discovery of blood groups. Shattock is credited with being the first to recognize the grouping of blood. At first only three groups were identified. Landsteiner, in 1901, showed that blood grouping is dependent of health or disease and follows certain laws. In 1902 the fourth group was demonstrated by Decastello and Struli. Jansky in '00 and Mow, in 1909, also found the group that Decastello and Struli referred to as Minor and Brem, particularly have thrown light on blood grouping. It has been thought that any unknown blood could fall into one of four groups. In the thirteen years following Mow's report, the status of four blood groups has remained unchanged, no group having been added or subtracted.

The authors of this article had a case of so called sickle cell anemia under observation in which it became necessary to determine the blood group. Contradictory results were obtained. By the usual procedures the patient's blood was found to have reactions characteristic of both Group I and Group III, that is to say the cells behaved like those of Group III and the serum behaved like that of Group I. This persisted for three months without change and all of the reactions were clear cut.

The authors then investigated the patient's family. They are able to secure the blood of fifteen immediate relatives. Three other members of the family showed the same blood grouping as the patient.

Incidentally the so called sickle cells are found in several members of the family. Of those who exhibited the unusual blood grouping, it is shown that sickle cells and it did not. These unusual manifestations do not seem to be dependent on each other.

In the case of another patient whose blood did not conform to the usual requirements of the four groups the authors concluded after many trials with always consistent results, that the patient belonged to a sixth group.

At present, Guthrie and Huck state merely that the blood of the first patient belongs to Group III whose serum is devoid of Agglutinin B and that the

blood of the second patient belongs to a Group II whose red cell content is extra agglutino-gen.  
S. I. ABRAHAM, M.D.

Tyler M. and Underhill, F. P. Does Menstruation Influence Blood Concentration? *Am J Obst Gynec* 9:3 5

The present method of estimating hemoglobin fails to show constant variation characteristic of any one phase of the menstrual cycle. During some periods the hemoglobin rises slightly but during others it falls. The change is not related to any symptom such as headache, with which rise in hemoglobin has been associated by some writers.

The uniformity of the hemoglobin percentage during menstruation might be predicted as the blood loss is certainly insufficient to cause measurable decrease. Recent studies during menstruation showed normal basal metabolism. F. type from measured work was as quickly overcome as at other times. The fact that there is no change in the hemoglobin content of the blood during menstruation during menstruation is in accord with our present knowledge regarding the physiology of this function.  
E. L. CORWELL, M.D.

Lehrbecher, A. The Theoretical Basis and Practical Application of Blood Pressure Estimations in Surgical Operations. (Die theoretische Grundlage und praktische Anwendung der Blutdruckmessung bei chirurgischen Eingriffen). *Berl. M. Chir.* 9: 1930 20

Blood pressure estimations during an operation were recently tried by Koenig, Anschütz, and others. Lehrbecher discusses his findings in 300 cases treated at the Nürnberg Hospital on the service of Burkhardt. He comes to the conclusion that determinations made before operation are of little practical value and that only in cases of pronounced internal hemorrhages does the method offer importance in the differential diagnosis.

Knowledge of the blood pressure during an operation helps in estimating the depth of the narcosis. A fall in the blood pressure during an operation is the earliest sign of collapse and shock.

A comparison between the figures obtained immediately after the operation with those obtained before is of little prognostic value. Of considerable greater significance is the reaction of the blood pressure during the evening of the day of operation and the next day compared with the determination made immediately after the operation. A considerable rise indicates a good prognosis. A blood pressure which is lower the evening of the day of operation or the next day than that obtained immediately after the operation is unfavorable.

In cases of postoperative bleeding, blood pressure estimations are of the greatest value for the diagnosis and the evaluation of the therapeutic measures used. The efficiency of heart stimulants may also be gauged by blood pressure estimation. This

method is particularly useful in estimating the good anesthetic effect of intravenous narcotics.

NAM-PIL (2)

Nicolajsen, N. A. The Transfusion of Blood in Acute Posthemorrhagic Anemia (Ueber Bluttransfusion bei akuter posthämorrhagischer Anämie) *Md. skr.* 9 1212-19.

The author reports four cases of citrated blood transfusion and one case of autogenous blood retransfusion (extra uterine pregnancy). In all of the cases there was severe posthemorrhagic anemia. In one this was due to hemophilia. In the other cases there was great danger to life and the transfusion seemed to save life though one patient died soon afterward from repetition of the terminal hemorrhage. In the three other cases also the anemia was very severe but death was not so directly imminent. In one of these an immediate effect was noticeable. In the second there was change in the entire course of the condition (hemophilia). In the third, the immediate effect was less noticeable because of an overlooked agglutination of the red blood cells of the donor but the later effect on the regeneration of the blood was favorable. Only a single test with the red blood cells of the donor (citrated serum suspension) and the serum of the recipient was made before the transfusion.

The best test was found to be microscopic examination upon the glass slide.

The clia was always exposed and punctured under distention so that the blood poured forth in streams and could be caught directly in the hollow needle. It is dangerous because of the formation of coagula. Thirty cubic centimeters of 5 per cent sodium citrate solution are placed in measuring glass into which 50 gm. of blood are caught and immediately mixed, and then another 50 cc. of sodium-citrate solution are added. As coagula form easily along the edge the blood is filtered through several layers of gauze before it was injected. The donor was always close relative of the patient. The donor experienced no unpleasant effect even when 1,000 cc. of blood were withdrawn.

POL (6)

Siperstein, D. M. and Karsky, J. M. Intraperitoneal Transfusion with Citrated Blood. An Experimental Study. *Am. J. Dis. Child.* 9 3 107-107.

The intraperitoneal transfusion of citrated blood in rabbits is safe, simple, and efficient procedure. Absorption of blood takes place very rapidly in the peritoneal cavity of rabbits. A rabbit can absorb approximately one fifth of its own blood volume in four hours.

The intraperitoneal transfusion in both anemic and normal animals causes a sharp temporary rise in blood values during the absorption period. This is followed by a more permanent increase.

Studies at necropsy when considered with the blood counts, apparently indicate that the initial

rise is due to the absorption of red blood cells from the peritoneal cavity and not merely to concentration of the blood volume.

Pigeon blood injected subcutaneously into rabbits apparently does not enter the general circulation in demonstrable amount. The same blood injected into the peritoneum is absorbed very rapidly.

The intraperitoneal transfusion of freshly citrated blood is a true transfusion, and not as the absorption of nutrient material.

The intraperitoneal route for blood transfusion is proposed as a therapeutic method of merit.

SARLES KARY, M.D.

## BLOOD AND LYMPH VESSELS

Calzavara, D. Wounds of the Common Carotid (Ferita della carotide comune) *Arch. ital. di chir.* 9 4 433.

The high mortality of wounds of the common carotid artery is due not only to the severe immediate hemorrhage but also to complications such as infection, secondary hemorrhage and the secondary severe cerebral lesions analogous to those following ligation of the carotid. The cerebral lesions are usually secondary to anemic infarcts of the brain (compensatory circulation by way of the circle of Willis or retrograde circulation from the external carotid may develop). Late complications may be caused by thromboembolism. When clot forms in the artery at the point of injury it may be carried later to the cerebral vessels to lodge either at bifurcation or in the brain. The other anatomical anomalies of the circle of Willis. The anterior (3 per cent) or posterior (7 per cent) communicating branch may be absent or the internal carotid may not communicate with the external. Some men believe that the blood loss and lowering of the blood pressure are so great that blood cannot be forced through the circle of Willis, while others claim that arteriosclerosis interferes with collateral circulation. According to another theory the ligation of the carotid all uses spasm of its coats through stimulation of the "constrictors," such spasm of the blood supply long enough to cause cerebral anemia before the collateral circulation can develop. This theory may be but a few minutes.

Experimental work on dogs and cats has not thrown much light on the subject with regard to man.

The author reports the case of man 33 years old who was shot in the neck, the bullet lodging beneath the skin of the neck. There was no tracheal pulse on the left side. On the right side hemiplegia developed. At operation the bullet as extracted and the carotid as exposed. The internal jugular and aorta were intact. Part of the carotid wall had been carried away and the proximal end of the artery as occluded by clot. The clot as disturbed and the wound was packed as pulsation began. Death occurred at the end of twenty hours.

At autopsy clot as found in the peripheral end of the common carotid, extending to the bifurca-

tion. The external and internal carotid, anterior and middle cerebral, and circle of Willis were patent and of normal caliber. There was no sclerous an anemic infarct of the brain and an increased amount of ventricular fluid were present. The author's opinion the anemia was caused by persistent spasticity of the arterial walls. Immediate operation is indicated after such injury to insure surgical hemostasis instead of insecure spontaneous plugging of the vessels. The arterial spasm may thus be relieved.

KELLOGG SPEED, M.D.

Ticky H. A Case of Arteriovenous Aneurism of the Subclavian Artery with Reversal of the Circulation of the Arm. A Contribution to the Functional Transformation of Blood Vessels (Ein Fall von Aneurysma arterio-venosum der Subclavia mit Umkehr des Arterienlaufes). In Beitrag zur funktionellen Gefassumbildung. *Zentralbl. f. Chir.* 93, 112, 50.

A former infantryman, 6 years old, as injured in the left shoulder, in 1905 by a bullet. An aneurism of the clavicular blood vessels resulted. The radial pulse disappeared. There was an exceptionally marked development of varices on the anterior surface of the left side of the chest on the left upper arm, which was much enlarged, and half way down the forearm. The pulse was palpable in the of the varicose strands (those representing the cephalic and the basilic veins).

In 1912 a sudden aggravation of the condition made amputation of the arm necessary. At that time, the varix representing the cephalic vein was widely gaping and bloodless, and presented rigid thick walls. The same was true of the case which, by its position, represented the brachial vein. Another varix, representing the basilic vein, was thrombotic above. The brachial artery was collapsed thin-walled, and full of blood. The histologic findings in the wall of the vein were as follows:

The intima was very considerably thickened. The muscle bundles in the media were separated from one another by richly developed connective tissue. There were no muscle fibers in the externa. While the media did not contain many elastic fibers, the hypertrophic intima showed very dense network. An internal layer of elastic fibers was distinctly recognizable.

ZILLNER (Z.)

Mueßer W. The Treatment of Defects of the Walls of Blood Vessels by the Application of Rubber Protective Coverings (Zur Behandlung von Gefasswanddefekten mittels aufgeklebter Gummischutzhüllen). *Zentralbl. f. Chir.* 93, 112, 87.

The author discusses Moccny's suggestion for the repair of defects in the walls of blood vessels.

In large and not too broad defects, hemostasis can be obtained by the application of rubber covering when suturing is impossible. This procedure may prove to be better than ligation because the occlusion of the blood vessel occurs slowly so that time is

gained for the development of a collateral circulation and necrosis of tissue is prevented. Attempts to obtain agglutination by means of rubber solutions are to be discontinued. A suitable wide soft rubber tube, split lengthwise, applied round the vessel and held together by loose coils of thread laid around it after the fashion of barrel staves accomplishes the purpose more easily and surely.

KALB (Z.)

## GENERAL BACTERIAL INFECTIONS

Miller R. H. Tetanus. A Report of 116 Cases at the Massachusetts General Hospital. *Surg. Gynec. & Obst.* 9, 3, 461, 90.

One investigator noted that tetanus often occurs only after the wound is dry and healing is well advanced. Another classifies cases of tetanus into three groups: (1) cases due to puncture wounds, (2) those due to cold or freezing, and (3) tetanus of the newborn.

Miller classifies the cases into two types: viz. tetanus ascendens or local tetanus, and tetanus descendens or general tetanus. In tetanus ascendens, the toxin, making its way directly to the cord, first involves the muscles of the wounded extremity, this being followed in some cases by general symptoms before death occurs. In tetanus descendens, which is by far the more common form, the involvement of the central nervous system comes, first, symptoms in the muscles of the jaw and neck, and then more or less extensive involvement of the rest of the body.

A preventive injection should be given in every case of injury, however slight, in which there is reason to fear tetanus. This applies chiefly to dirty puncture wounds of the feet or hands, severe lacerating wounds of any part of the body, and especially compound fractures.

Since 1871 116 cases of tetanus have been treated in the Massachusetts General Hospital. The total mortality was 60.9 per cent. Antitoxin was first used in 1896. Previous to 1896 the statistics included twenty cases, in which the mortality was 80 per cent. This demonstrates that a certain number of cases of tetanus will end in recovery even if they are not given specific treatment. Since 1896 there have been ninety-seven cases with a mortality of 67.7 per cent. This slight decrease in the mortality the author believes is due to more intensive and intelligent administration of antitoxin.

Of the last five cases under his observation, three recovered. The first was that of a school girl, 6 years of age who was admitted to the hospital with a puncture wound of the foot. Treatment according to the symptoms caused the disappearance of signs of tetanus in seven days but the patient died of bronchopneumonia.

The second case was that of a man 44 years of age who was admitted to the hospital with a lacerated infected wound over the right tibial tubercle due to the kick of a horse. This was the first case

in which luminal as used. It had no untoward effect and proved of value.

The third case is that of a child 4 years of age who had infected numerous mosquito bites by scratching. It was not a very severe case and the patient recovered after the administration of 55,000 units of titoxin.

The fourth case was that of a girl 7 years of age who had a puncture wound of the foot due to a nail. The wound was treated in the routine manner and a titoxin and luminal were given. This was a very severe case and, in the author's opinion, was saved by the treatment.

The fifth case was that of another girl 7 years old who had an infected wound of the upper arm. This was a severe case and seemed almost hopeless from the beginning. In spite of treatment the patient died.

The author concludes as follows:

1. Prophylactic injection of titoxin should be given in every case in which there is the slightest possibility of the development of tetanus.

2. Excision and debridement of the wound is the first essential. The wound must be kept open.

3. The use of rosinewer sulphat and carbolic acid is of doubtful value.

4. Sedatives must be used as indicated. Luminal is a valuable drug.

5. A titoxin should be given in large doses by the intraspinal and intracerebral routes and in small doses into the tissues around the wound.

GEORGE E. BERRY, M.D.

## SURGICAL DIAGNOSIS, PATHOLOGY AND THERAPEUTICS

Clark, A. J. The Scientific Basis for Non-Specific Protein Therapy. *Bull. M. J.* 9:3:35

Clark reminds us of the increasing number of clinical cases greatly benefited by the judicious use of foreign proteins or the products of protein breakdown. These clinical successes developed largely in America and Germany have forced the attention of clinicians who for the most part were previously biased by the belief that, to be of value, such therapy must be of a specific nature. This article attempts to summarize the present status of scientific evidence regarding the nature of the effects of foreign protein therapy.

Intravenous administration, when properly controlled, has been found a rapid and very effective method. It is indicated in acute infections such as typhoid fever in which the foreign protein often causes termination of the fever by crisis, and also in chronic infections such as arthritis, gonorrhea, and anthrax. The reaction is more severe when the agent is given intravenously.

The febrile reaction is essentially the same whatever agent is employed. Sterile milk, purified casein, normal serum, purified proteoses, or peptones may be utilized. Bier believes that any agent causing the breakdown of body proteins will give therapeutic

result similar to the results of foreign protein injections. Accordingly radium, the X-ray and the castor oil give rise to the same febrile reactions by destroying tissue cells.

It appears probable that the common active principle in the protein reaction is a product of protein decomposition. The reaction is characterized by rise in the temperature associated with an increase in nitrogen metabolism, contraction of the smooth muscles, increased glandular secretion, and increased permeability of the capillaries.

An excess of protein decomposition products is violently toxic. Hence the necessity of carefully controlling the dosage of the protein employed.

Perhaps the most important effect of protein therapy is the increased permeability of the capillaries, especially those of the liver and the skin. A direct result of this there is an increased flow of lymph which washes the products of cell metabolism into the blood stream.

The chief blood changes consist of an immediate leucopenia followed by leucocytosis and an increase in fibrinogen, globulin, thrombokinase, and blood sugar. The proteolytic ferments become definitely more numerous. The antibodies are also increased. The bulk of evidence indicates that non-specific protein therapy results in the washing of cell and tissue fluids into the blood stream causing definite changes in the composition of the blood. Much of these changes is directly responsible for the beneficial clinical results as still unknown.

JOHN W. STARR, M.D.

Willebrand. The Histologic Processes Occurring in Skin Implanted by the Braun Method (*Leber der histologischen Vorgänge bei Hauttransplantation nach W. Braun*). *Arch. f. klin. Chir.* 9:2:435

The author has estimated the histologic processes in the skin grafting method of Braun, according to which pieces of skin, to 4 sq. cm. in size, are sunk obliquely into the depth of the granulation tissue. The implanted pieces of skin were removed after one, five, seven, eight, fourteen, twenty-one, thirty-six, fifty-one days, and six months, and examined in serial sections. Special attention was paid to the behavior of the implant (epidermis, the transplanted tissue of the cutis, especially the elastic fibers) and of the stroma (blood vessels, elastic fibers, connective tissue and granulation tissue) the healing, and the clinical results.

The implant and the stroma showed direct agglutination. There was no vascular or fibrin layer. As rule signs of inflammation, marked filling of the blood vessels of the stroma, and diaporesis of polymorphous leucocytes are noted as result of the foreign body irritation. After forty-eight hours the derivatives of the connective tissue cells and the vascular endothelia equalled the round cells in number. The injuries to the epithelium due to the cutting, the effect of air drying and squeezing were of short duration as after twenty-four hours progressive changes (mitotic figures) were already

recognizable. After forty-eight hours, conical proliferations of epithelium and a new formation of epithelial cells were visible.

The regeneration of the epidermis began in the cells of the tratum cylindricum and tratum spinosum. The adnexa of the skin (glands, sheaths of the hair roots) did not play any part. As the growth of the epidermis progressed, the graft canal lined with epithelium which then spread over the surface of the granulations. Sections of the transplanted cuts were destroyed and the replacement occurred from the viable implanted connective tissue elements and from the stroma. From the eighth day the border between the substratum and the implanted skin became indistinct. The connection with the circulation occurred through ascular sprouts from the stroma. Degenerative changes appeared early in the elastic fibers. The new fibers originated at the edge from the fibers of the stroma.

The skin grafting was done thirty-two times. The tendency to shrinkage was slight. The possibility of moving the graft on the substratum was limited in the beginning but improved after eight to ten weeks. Sensibility was always reduced, but the sense of pressure was usually maintained. The final result was always a resistant, lasting skin. Epithelial cells were not observed. FRANKENBERG (Z)

## ROENTGENOLOGY AND RADIUM THERAPY

Worton, R. Deep X Ray Therapy (in *J. Radiol.* 1914, 9, 3).

Deep roentgen therapy is primarily a matter of roentgen ray dosage since it is definitely proved that under certain well defined conditions an abnormal cell is killed by an exposure to the roentgen ray—that is, is inefficient to destroy normal cells. In estimating dosage, both primary and secondary radiation including scattered primary rays, must be taken into consideration. For accuracy of measurement of the primary radiation it is essential that homogeneous rays be used as all the factors concerning these rays be carefully worked out. Secondary radiation is more difficult to measure accurately, but it is known that at any given depth it increases directly in proportion to the hardness of the tube and the size of the field irradiated. The charts prepared by Desautel are of inestimable value as they make it possible to adopt a technique which will give an even irradiation of any lesion of moderate size at any of the usual depths.

Seris and Wints of Erlangen have evolved a system that may be justly described as the first complete system of roentgen therapy having a sound physical and biological basis. As a basis of dosage they use the unit skin dose. Working under their prescribed conditions, which are easily reproducible with the equipment they have evolved, this dose gives rise after about five days, to slight hyperemia which gradually subsides, leaving the skin undamaged though pigmented or tanned. Taking this unit skin dose as 100 per cent, the limit of tolerance is as

follows: muscle, 180 per cent; intestine, 35 per cent; ovary, 35 per cent; tuberculosis, 50 per cent; sarcoma, 60 to 70 per cent; and carcinoma, 90 to 120 per cent. Forty per cent stimulates, 60 to 90 per cent paralyzes.

Measurement is carried out by means of the sento-quantimeter or with Kienboeck's strips. The dosage is controlled by time alone when once the activity of the tube has been ascertained.

Certain factors have an important bearing on the probability of a successful result from irradiation. If the patient's general health is practically unimpaired and the lesion is localized to a relatively small area and without widespread local extensions, if every part of the growth is accurately evenly and thoroughly irradiated, and if the general health is carefully looked after during the subsequent weeks, it may be laid down as a general principle that the abnormal growth will disappear.

In the technique certain difficulties are encountered in practical work. If possible no skin area or other normal structure should receive more than the unit skin dose. Overdoses and also normal doses repeated three or four times bring about an obstinate local order. These hard rays seem to have a special effect on the local lymphatic circulation. Loss of radiation between the surface and the lesion beneath by dispersion and absorption must be compensated. Superficial conditions are easy to deal with. If only the skin is involved, every even irradiation may be obtained by long focal skin distance, the time being increased as the square of the distance. Central lesions are probably the easiest to treat with accuracy. The depth having been ascertained and the percent given from each point of entry being known, the lesion is attacked from as many points as necessary to build up the desired dose. The difficult cases are those with superficial lesions in which there is limitation practically to one point of entry and those in which the lesion is situated in parts of the body having an irregular contour such as the jaws, the neck, the female breast, the ulna, and the anus. In this class of cases the difficulty has been partly overcome by covering the lesion with some material having the same absorption and secondary radiation value as normal tissues so as to make it a central lesion. Water paraffin wax, bees wax, and dough made from ordinary flour are all suitable.

In conclusion, by way of encouragement, the author briefly reports several cases he has recently treated with encouraging results. One was an inoperable carcinoma of the breast. The improvement was so great that surgical operation was given up indefinitely. A case of cancer of the esophagus with practically complete obstruction as relieved of the obstruction and the patient regained his normal weight. A case of carcinoma of the pancreas as symptomatically cured and has remained so for fifteen months. A case of cancer of the prostate was sufficiently improved to render catheterization unnecessary and the patient is well.



and enjoying life. A patient with a rather hopeless sarcoma of the lung shows retrograde changes and appears to be in perfect health.

ADOLPH HARTUNG, M.D.

Wintz, H. Injuries from Roentgen Ray. In *Deep Therapy*. *Am J Roentgenol* 19 3, 2, 140.

Aside from injuries attributable to careless or unskilled handling of the roentgen apparatus and overdosage certain dangers are inherent in the gent itself when it is used, at present, in deep therapy. These are divided into two groups, local and general.

In the first group are injuries caused by exceeding the limit of tolerance of the tissues and resulting from the defects of our present radiation technique. To give sufficient radiation to deep-seated lesions cross firing is necessary and regardless of an otherwise exact technique certain structures in the line of the rays may receive an overdose because of summation, this resulting in edema or ulceration. Thus parts of the mucosa of the intestines or the urinary bladder may be affected when treatment is given for uterine cancer or parts of the larynx or trachea may be injured when adjacent parts are irradiated. These injuries may be due to direct overdose or result secondarily from vascular injuries.

Another factor responsible for injuries is the addition of a radiation intensity derived from unknown secondary radiations whereby the radiation dose is increased though the primary radiation was correctly gauged and did not exceed the limit of tolerance of the tissues. Retained opaque media, fecal masses, and collargol injected into the urinary tract may act in this manner.

Lowered resistance of irradiated tissues to injury may be another cause of local injury and probably explains the so-called late injuries. If the effect of the roentgen ray upon the cells another irritant is added which normally could cause no injury at all, the skin will respond to the summation of the two irritants with a distinctly recognizable reaction. Factors that may incite such a reaction are persistent pressure upon the irradiated part of the skin, the application of ice bags or hot compresses and chemical changes produced by the administration of internal remedies. Severe trauma of irradiated parts of the skin may cause serious injuries such as necrosis.

If the same dose is repeatedly employed in the same part of the body the total of the macroscopically demonstrable injuries will produce peculiar picture, namely roentgen raduration. The skin is irradiated with a dose of 100 per cent of usual skin dose two times, or at the most, three times, at intervals of from six to ten weeks, becomes leathery and thick, feels tough and hard, and presents an edematous appearance. The cause of these changes is atom appearance. The cause of these changes is undoubtedly to be found in vascular injuries and an increased permeability of the vessels and the connective tissues, including the muscles and the connective tissues, will react in a similar manner. The power of resistance of tissue thus injured toward further

additional injuries, such as traumatic or chemical noxae or infection, is considerably lowered. If during the period of the irradiation (raduration) the skin is protected against all injurious influences, the condition will recede in from one to one and a half years.

Far more dangerous is the irradiation of the pulmonary tissue which may appear after irradiation of mammary carcinomas or lung tumors. The findings in such lung resemble those of a central pneumonia. Fever is absent but there is slight irritative cough. The affected part of the lung is, of course, useless. This condition is also comparatively harmless and will recede spontaneously in the course of one-half to three-fourths of a year. If an intercurrent disease (pneumonia or bronchitis) complicates the radiation raduration the prognosis is almost nil as poor.

A greatly increased reaction is to be noted when every gross change in the tissue because the roentgen treatment introduces an additional noxious agent. This increased reaction may be observed even when the skin is only slightly irritated. Attention called also to the inflammatory reaction of the tissue following radiation of the ovaries in cases of doctored adnexa. The reaction will be increased also if the cells are not widely changed and when a systemic disease exists a injurious influence upon the cell.

In addition to the local injuries enumerated, deep roentgen therapy may produce certain general or systemic injuries on the operator as well as the patient. These include blood injuries and those due to inhalation of the air of the roentgen room and surgery.

Such can be avoided only by special devices. Acute blood injuries result from acute destruction of the blood corpuscles. They follow long-continued irradiation and are observed only in the patient. Chronic blood injuries due to the effect of the roentgen rays as well as the roentgen occur in the personnel of the X-ray room.

Destructive changes in the blood occur during each therapeutic irradiation for the destruction of pathologic cells. Their amount is directly proportional to the quantity of rays introduced and can usually be overcome if the patient's vital capacity is not too low.

The injuries caused by irradiation include also the so-called roentgen hater or roentgen radon position. Changes in the biochemistry of the cells are produced by the roentgen ray through injury of the cell lipids.

The general injuries occurring in persons using the X-ray are principally chronic blood changes consisting of rather high percentage of eosinophilic leucocytes (1 to 5 per cent) and leucocytosis (1000 to 4000) which appear after long continued X-ray work. The injurious agents are found chiefly in the air which has been studied by the electrical surges and particularly by the ozone formed from the air by the roentgen ray.

Many of the dangers inherent in deep roentgen therapy cannot be avoided even by the best technical and medical construction of the apparatus and

the most thorough instruction of the technical and medical personnel. Others may be obviated if their existence is recognized and proper measures are taken. The knowledge of the therapeutic value of modern deep roentgen therapy will stimulate systematic and correct investigation to avoid dangers and thereby contribute to the success of deep roentgen therapy.

ANDRÉS HARTRO, M.D.

Halberstaedter L. Roentgen Carcinoma (Ueber das Roentgenkarzinom) *Ztschr f Krebsforsch* 9 91, 5

The author differentiates between two types of roentgen carcinomata: (1) those occurring as occasional lesions from the professional use of the X-ray in which the influence of the rays is produced over a long period of time though in hardly measurable amounts; and (2) those resulting directly from investigations or treatment with the X-ray. The course of both is similar: drying of the skin due to the function disturbing or destructive effect of the X-rays upon the sebaceous and sweat glands, the formation of rhagades, hyperemic reddening, the development of pigment, the formation of hornlike accretions (hyperkeratosis) and vascular dilatation. The disease may become treated in stages, or more severe changes may gradually set in without further exposure to irradiation. Hyperkeratosis especially tends to carcinomatous degeneration. Chronic superficial ulcerations follow comparatively trifling injuries. The regional glands are attacked relatively late. The histologic picture is that of cornified squamous cell epithelioma.

Tumor formation may result from the influence of the X-rays also in skin which was previously abnormal, as in lupus vulgaris, leprosy in lupus erythematosus, and occasionally in psoriasis.

Besides carcinoma, sarcoma may ensue. Experimentally this can be shown in the rat.

Disease conditions of the skin resembling the conditions caused by X-ray degeneration are zero-doma pigmentosum (Kapou) and seaman's skin (Urtica). Roentgen skin (X-ray skin) xeroderma pigmentosum, and seaman's skin have this in common, that they develop as result of physical irritation associated with radiations of short wave length. The appearance of pathologic changes is question of dosage and hypersensitiveness.

The course of all three diseases extends over period of years. Pre-eminent among the symptoms are the pathologic changes mentioned. In Orthoff's opinion these should be considered precarcinomatous. X-ray cancer is to some extent an involuntarily produced experimental cancer and exhibits striking parallelism to the cancer produced in mice and rabbits by tar.

SCHLESINGER (Z)

Weber, J. H. D. The Clinical Results of the Treatment of Malignant Diseases by the X Rays. *Lancet* Oct. 17, 1913

As different cases radiation treatment is used as a prophylactic, palliative, or a curative

agent, the results of each should form separate statistical group. Cases treated by prophylactic radiation in collaboration with the surgeon should constitute distinct group subdivided according to

whether the radiation is given before the operation or after or both. Also the results of palliative radiation after many incomplete operations or in inoperable cases (and, perhaps, the majority of cases at present referred to the radiologist are in this group) should be considered separately. In only small proportion of the cases referred for radiotherapy can attempt be made to arrive at definite cure.

Of the cases in which curative radiation is given the majority are cases of superficial epithelioma of the basal cell type. The cosmetic results of roentgen ray or radium treatment are better than those of surgical measures and the percentages of clinical cure are as high or higher. The chief causes of failure are inadequate or wrong methods of application. The results in cases of squamous cell epithelioma are not as good as those in cases of basal cell epithelioma because the former there is frequently an early wide invasion and the lesion is of more persistent type requiring more intense doses. The tongue is most unfavorable site for any form of treatment but clinical cures obtained by radiation, especially by methods of radium implantation, are recorded. When the roentgen ray is used, cases often fail to react to massive doses and improve when given repeated fractional doses administered within period of month or two to the most

The treatment of breast cancer is one of the fields in which radiation may be expected to be of the greatest service in reducing the mortality or prolonging life beyond the average duration of two and one-half to three and one-half years. In this condition also the results should be grouped according to whether the treatment was given for prophylaxis, palliation, or cure. The best results published so far appear to be those of surgery and radiation combined. Poor results may be attributed largely to faulty methods or technique. In about 50 breast cases radiated in the past year the author has seen very few recurrences while course of roentgen radiation was in progress. A considerable number of the patients coming for treatment have shown regression, at least temporarily. About five cases of recurrence in bone have been treated but the results so far are inconclusive. In two operable cases of primary cancer of the breast one treated with the roentgen ray and the other with radium, the growth practically disappeared. Palliative radiation has a wide field, sometimes resulting in operability or relieving the pain, ulceration, etc. or delaying further extension and the inevitable same. In cases with ulceration the best results were obtained when x-ray or other ionization preceded the radiation.

In cases of mechanical growths few clinical cures have been obtained, and a large number show temporary benefit. Testicular tumors are of great interest of five cases treated under observation for extension into the lumbar glands or recurrence

after removal of the testicles, several responded satisfactorily.

With regard to malignant gynecological conditions there is a wide range of opinion as to the relative value of operation and radiation. Some European clinics report a high percentage of clinical cures from radiotherapy in both operable and inoperable cases but insufficient time has yet elapsed to determine the permanency of such cures. Certain facts suggest that combined surgical and radiation technique as in breast cases, may give better results than either operation or radiation alone. Inoperable cases have frequently been rendered operable by radium treatment. Like testicular growths, ovarian neoplasms are often very radiosensitive and pelvic masses sometimes regress quickly relieving pressure or other symptoms. A number of cures of uterine carcinoma obtained by radium and by the roentgen ray have been reported.

Gastric cancer was the first cancer to be treated by the roentgen ray but it probably be one of the last to yield to radiation or any other form of treatment. Compared with gynecological cancer of the stomach occupies most unfavorable anatomic situation as it is by vitally important glands and other structures. Radiation is regarded as inadvisable after partial gastrectomy but very few cases so treated have been reported. Primary cases with not very marked carcinosis should be given the chance of roentgen ray treatment as in some instances extraordinary results have been obtained by this procedure. Cancer of the colon sometimes reacts well, with or without resection or colostomy. Each case must be treated according to its particular requirements. Usually both surgery and radiation are indicated.

As regards sarcoma other than uterine sarcoma, the author believes that the conclusions of Perthes and Juengling may be generally accepted. These are as follows:

1. In all cases of inoperable sarcoma, even large gliosarcomata of the brain, the roentgen ray should be tried. The remarkable results in hemophyseal tumors are noteworthy.

2. Lymphosarcomata should be radiated rather than operated on, as they react well to radiation.

3. Perosteal sarcomata of the pelvis, humerus or limb joints better results are obtained with radiation than with operation.

4. Malignant osteosarcoma sometimes regresses without any treatment. The results of resection are good, but if amputation is considered distasteful should be tried first.

5. Mammary sarcomata, if operable should be resected (they are difficult to radiate satisfactorily) and all the early recorded cases were resected.

6. Skin sarcomata should first be radiated if refractory to radiation, they should be excised.

The results of radiation on a tumor which reacts well may be (1) complete disappearance by absorption of the degenerated tumor cells, (2) lessening of the size of the tumor but persistence of residue

usually firm proliferative connective tissue (in some cases it may be advisable if possible to remove this by operation, but if not, it should be watched for many years for signs of renewed activity) or (3) reduction to a certain degree and then no further change, the tumor appearing biologically dead.

A rapid increase in size and generalization are sometimes observed in cases underdosed or refractory or in which the neoplasm, as already too widespread, and as typical malignant tumors sometimes though rapidly after heavy radiation, fractional dosage methods are advisable if the case seems still suitable for treatment. Local results, apart from those in the tumor are usually temporary such as those in the skin and the urinary and intestinal gland.

Undesirable general results from radiation are usually seen in the blood, the intestines, or the ductless glands. In considerable series of cases not as much blood change was found as had been expected and there was no trouble with bowel sequelae. In one stomach case there was light but definite adrenal insufficiency for about 1 month, although only one adrenal received considerable dose. Temporary general effects of radiation such as rheumatic sickness, are reduced in intensity by careful previous preparation of the patient.

It is the author's belief that cautious progressive treatment of cancer is represented by the conclusions of Schumacher and Hoeffelder which are as follows:

1. With few exceptions, every operable carcinoma should be operated on. Prophylactic postoperative radiation should be given also.

2. In addition to postoperative radiation, single intensive radiation before operation is important.

3. Practically all inoperable carcinomata and all inoperable recurrences should be radiated. In many cases this gives a clinical cure. In others it results in operability, and in many in a decrease of the bleeding, irritation, and pain, and limitation of further metastases.

4. Facial carcinomata, even when operable may be treated exclusively by radiation for cosmetic reasons.

5. As a rule, sarcomata should only be radiated certainly in all cases in which operation would cause considerable mutilation. An increase in the size of the tumor after an efficient radiation should not be considered proof of failure to respond as usually it is temporary.

6. The treatment of malignant tumors of the roentgen ray has become superior to radium.

7. The relative values of operation and radiation cannot yet be shown by comparative statistics.

Radiation treatment is in rapid process of evolution. Lines of advance are indicated as regards technique, studies of the physical and histologic side of biological radiation effects and auxiliary therapeutic measures such as diathermy, ionization, etc. The author holds the view that however may be the ultimate value of radiation treatment used alone or as combined method, the curative action of the

roentgen ray and radium is the first rational therapy of cancer ever devised from the point of view of humanity because in its mode of action radiation calls on the body's forces to accomplish the cure.

ABRAHAM HARRISON, M.D.

### LEGAL MEDICINE

Responsibility for Payment of Physician in Accident Case. *Fruin vs. Glassnap*, 7 *Atlantic Rep.* p. 547.

In this case there was a conflict of evidence between the physician and one whom he sought to charge for services rendered. A child was injured by a truck driven by Glassnap and carried by third person into the office of Dr. Fruin. The physician immediately administered first aid and on examination discovered that the child was seriously injured and would have to be confined in a hospital for eight or ten weeks. According to Fruin, Glassnap came to his office soon afterward and on being told of these facts and that there would be a charge for treatment of the child, answered that he wanted Fruin to take the case and paid \$500 for the expense of roentgenogram. Glassnap denied that he had any conversation whatever with the physician concerning payment for services rendered or to be rendered and stated that he paid no money.

The jury found in favor of the physician but it was claimed that error was committed by the trial court. The Supreme Court said: "This defendant (Glassnap) asserts that he stood in the position of a stranger who simply calls on a physician to care for him because of sudden injury and is unable to act for himself and to whom the stranger holds no relationship which creates an obligation to furnish proper medical care. If the conditions in which these parties stood, the burden rested on the plaintiff (the physician) to prove either an express promise by the defendant to pay the plaintiff for his services or circumstances or language from which his promise to pay might fairly be implied from the request he made."

From the evidence relating to the conversation between the parties and the time and circumstances in which it took place and also to the payment of \$500 on account, it might reasonably be found either that the defendant made an express promise to employ and pay the plaintiff for his services or that he made request of the plaintiff for his services which implied promise to pay for them. As to the difference between these alternatives, the court did not sufficiently instruct the jury. It did not define an express promise as an implied promise. The judgment as accordingly set aside and new trial ordered.

WILLIAM F. MOOREY

# GYNECOLOGY

## UTERUS

**Kron, I. Uterine Secretion. An Experimental Investigation into Its Effect upon the Coagulation of the Blood.** *Surf. Gynec. & Obst.* 23: 1, 17.

One of the important problems confronting the gynecologist is that of so-called essential uterine hemorrhage. It is quite obvious that before we can explain the pathologic condition we must first know the cause and the mechanism of normal menstruation. In the latter phenomenon the most striking feature is the fact that the hemorrhage runs strictly limited course in spite of the apparent coagulability of the menstrual blood. Schukle showed that uterine extract retards the coagulation of the blood. Thoms holds that the factor responsible for the non-coagulability of menstrual blood is the antithrombin formed by the uterine mucosa. This he explains, prevents clotting by neutralizing the action of the fibrin ferment. I have bleeding he describes it as an excess of antithrombin. As far back as 1899 Flood showed that in animals the uterine secretion

In a series of preliminary experiments the author attempted to imitate the effect of saline and distilled water extracts of human uterine mucosa but his results were inconsistent and contradictory probably because his extracts contained other tissue juices and blood.

In his animal experiments eighteen young female rats were used. The uterus was exposed by a supra-pubic median incision. In half of the animals ligatures were then tied below the bifurcation and in the other half placed round one horn just below the bifurcation. The animal was then examined internally by one to three weeks by other paratomies. In the successful cases marked distention of the ligated portion of the uterus due to clear opalescent fluid was found. This fluid was removed by means of a fine aspirating needle and tested against blood removed from the heart of the same animal or another of the same breed.

Later in the series of experiments the secretion from the uterus of the rat was heaped against guinea pig blood cells and human blood. The results obtained were the same. In all of the experiments the uterine extract delayed the coagulation of the blood by from ten to eight minutes and when the clots were incubated with it they usually redissolved entirely.

Taken in conjunction with the findings of White, Moore, H. H. Frank, and others, the results of these experiments justify the theory that the cause of abnormal bleeding which cannot be accounted for on anatomical grounds (i.e. the presence of a neo-

plasia, etc.) is due to a defect in the normal in the secretions formed by the uterine mucosa.

C. D. HARRIS, M. D.

**Trenchhoff, B. L. Ventrofixation of the Uterus and Its Complications.** *Heute (Zur Frage der Ventrofixation und ihrer Complicationen. Dr.)* *Arch. f. Gyn. & Chir.* 9: 412, 1910.

The few writers on the indications and the method of operation are still widely divergent. In regard to the indications Vorchio agrees in general with Kuestner. He ascribes an important part to all disturbed retroflexion, which is the first degree of prolapse, and which he believes should be treated at the time of maturity. The Alexander operation is discontinued. If an operation is done the cavity of the lower pelvis should be exposed to view.

The incision generally used by the author is the Pfannenstiel incision of Kuestner. The Pfannenstiel incision cannot be extended when necessary. If suprapubic is feared, the median incision is employed. A rhinoplasty and excision of the levator ani turbanes in labor like the Ochsner operation they are applicable only after the menstruation or when simultaneous castration is to be done.

Heu is ventrofixation. T cases due to fixation of the promontory have been reported by Ochsner three by Bary and others by Harnup. This condition arises from strangulation of the coil of intestine in the extra-uterine space usually at the site of the broad ligament ligament. Symptoms are produced by traction on the peritoneum. Recurrences are frequent, especially after the Alexander Adams operation.

The Döller Gallium operation avoids all these complications. In this procedure the broad ligament is grasped about 1.5 cm from its insertion in the uterus and after the formation of a puncture canal through the rectus muscle is fixed to the anterior sheath of the rectus sheath. The lateral portion then passes to the inguinal canal as a loose band and so close to the abdominal wall that no intestinal coil can slip through it. The dangerous site is avoided. The sutures in the ligament are buried by duplication of the fasci.

This operation is done 53 times. T cases of these are found among 117 cases examined subsequently. In these the uterus was as partially adherent to the large intestine as the case of Douglas had used the large intestine with its forming loop. I order to avoid such an occurrence the uterus must be freed from adhesions. There is partial recurrence in only one case. In this instance laparotomy showed that the ligament was stretched

ent into a thin peritoneal thread. Disturbances of labor were never observed. Two women died from pneumonia. Respiratory exercises and in febrile cases, the administration of 2 gm. of optochin six times in addition to autogenous blood transfusion of 500 cc. eliminate the danger of pneumonia. Of twenty-two retroflexions, fourteen were symptomatic, four were benefited, and four were not benefited. Of thirty-five cases, twenty-two were complicated. The method offers excellent results in both complicated and uncomplicated cases. KULENKAFFER (Z)

Weiss, E. A. Radium in the Treatment of Uterine Hemorrhage of Non Malignant Type. *Am J Obst & Gynec* 9 1 58

Eighty-three of the cases studied were cases of bleeding myoma. Only those in which the tumor was no larger than three months gestation were chosen for radium treatment. Intraligamentary or degenerating tumors were not considered suitable. Reports of favorable results from other clinics, pedunculated tumors were also excluded from the series because those suggesting degenerative changes. Any evidence of inflammatory changes in the adnexa, either acute or chronic, contraindicates radiation.

Of all cases receiving full dosage forty were relieved at once and there was no return of the bleeding. Thirty-five of the women menstruated once and fifteen menstruated three to five times. Ten received treatments. The irregular bleeding for the first ten days after treatment is not to be attributed to the radium, it is rather the effect of the curettement, if not due to disturbance of the ovarian hormone. A large percentage of the patients had leucorrhoea in varying amounts for the first two to five months. Frequently this was very annoying and irritating. As a rule it was relieved best by douches of bicarbonate of soda. Probably the most annoying sequelae were nausea and vomiting which occurred when the radium was used. In the cases of patients who were not anesthetized these were often attributed to the preliminary doses of morphine, but the authors as present in eighteen cases which neither morphine nor gas was given.

With regard to the treatment of benign hemorrhage from the uterus the author makes the following statements:

1. Radium should be used only in selected cases such as (1) myopathic bleeding of adolescence which does not respond to the usual medical and hygienic measures (2) bleeding myomata which are of small or moderate size and uncomplicated by adnexal disease (3) the menorrhagia of the menopausal phase.

The dosage depends upon (1) the age of the patient (2) whether the function of child bearing is to be preserved or sacrificed.

3. Myomectomy should be performed in the case of young women, a hysterectomy when the tumor is large or complicated, in preference to treatment with radium.

4. Complications and unfavorable results can be avoided only by a careful discriminating differential diagnosis.

5. All cases treated with radium should be carefully followed up for several years.

E. L. CORRELL, M.D.

Giles, A. E. The Indications For and the Results of Myomectomy. *J Obst & Gynec Brit Emp* 9 200 608

One important indication for myomectomy is the child bearing age. Myomectomy is the operation of choice up to the age of 40 years. In the other practice, myomectomy has been performed on 5 per cent of women under 30 years of age, on 34.3 per cent of those between 30 and 35, on 9.3 per cent of those between 35 and 40, on 6.9 per cent of those between 40 and 45, on 3.1 per cent of those between 45 and 50, and 1 per cent of those over 50.

Myomectomy is indicated also by the association of fibroids with prolapse, this complication requiring the preservation of the uterus for fixation to cure the prolapse. Another indication is objection to hysterectomy on the part of the patient. In some women the loss of the uterus is apt to be followed by profound and persistent depression. X-ray treatment is therefore preferable. Myomectomy may be properly done also in cases of solitary or pedunculated tumor is not associated with excessive bleeding.

Hysterectomy is preferable to myomectomy after the age of 45, when fibroids are associated with bilateral tubal disease or ovarian tumors, when the uterus left will be battered and useless, when the fibroids cause excessive hemorrhage and when the patient demands complete cure and will not consider a risk of failure.

Myomectomy is done during pregnancy only in the presence of urgent symptoms or for fibroids complicating labor. Surgical treatment of fibroids during pregnancy may be myomectomy or cesarean section combined with myomectomy or hysterectomy (term). The indications for myomectomy during pregnancy are (1) rapid growth of the tumor (2) pain pressure symptoms, or indications of septic or degenerative changes in the tumor (3) when it seems evident that because of its position the tumor will obstruct labor. Myomectomy during pregnancy is satisfactory operation.

RAYMOND E. W. THOMAS, M.D.

Bourne, V. The Modern Scope and Technique of Myomectomy. *J Obst & Gynec Brit Emp* 9 200 59

The author reviews the history of myomectomy, details of the difficulties encountered before the development of modern surgery. Reference is made to a remarkable paper read before the Liverpool Medical Society by Alexander describing a method of enucleating fibroids, the leading features of which were median laparotomy, single tenor incision in the front of the uterus, packing of the cavity left after the enucleation with iodoform gauze and

central fixation. Because of the severe criticism of the operation at that time it was discarded.

The author believes the uterus should be conserved in women in the child bearing age for the following reasons:

1. Many women both before and after children feel that they cannot justify their existence if the hope of reproduction is gone.

2. If hysterectomy is disturbing from a sexual point of view.

3. In women under 45 years of age child bearing is possible if the uterus is conserved and the ovaries and adnexa are healthy.

4. The removal of the uterus hastens the menopause.

Bosney reports 200 cases of myometrium in which from one to thirty fibroids were removed. The location of the tumor is of little importance. If necessary the endometrial cavity may be opened. Cervical fibroid are the most difficult problem. Malignant degeneration, and necrosis and perforation due to sepsis are contra-indications. Pregnancy pedunculated or superficial polypoid tumors can be removed without great danger of miscarriage. The removal of more deeply seated tumors is associated with greater risk. Bleeding is difficult to control. The recent development of the curettage or curet for the excision of fibroids.

Menorrhagia and profound anemia may indicate myometrium, but moderate menorrhagia and anemia does not, provided all the tumor is removed and the remaining uterus is not too large for its position. In all cases fibroid with menorrhagia the uterine cavity should be opened to make certain that no small fibroid on the mucous face, mucous polypus, or great thickening of the endometrium is left. For the scraping of thickened endometrium the author has found very efficacious the steel finger which formerly used for the removal of adenoids.

1. Bosney cases the most difficult myometrium was 2 per cent. One patient died of hemorrhage and another of shock. The chief danger is hemorrhage. In no case so far as is known has there been recurrence of fibroid. If the woman becomes pregnant one or more times since the operation.

With regard to the technique of the operation the author states that all tumors are removed through single incision in the anterior wall. The fibroid must be accessible through this incision as it is first and then this has been excised the next most accessible is reached by secondary incision begun in the all of the cavity left by the first tumor. If the tumors are located in the posterior wall he goes through the cavity of the tumor. Redundant tissue is cut away and the cut edges are closed and facilitate apposition in turning. The uterus is closed with nitro and superficial tumors. In some cases anterior fixation of the uterus may be necessary. To control the ovarian vessels during the operation the author applies ring forceps on the

ovarian pelvic ligament. If the operation is to be difficult he also temporarily clamps the uterine artery on both sides. All four main vessels of the uterus may be safely ligated without fear of gangrene.

The article is concluded with the statement that a rule should not necessitate hysterectomy and that if all organs with fibroid could submit to operation safely by hysterectomy could never be necessary for this condition.

R. THOMPSON, M.D.

Gordon, O. A. The Treatment of Hydatiform Mole and Chorio-epithelioma. With a Consideration of the Relative Frequency of Each. Surg. Gynec. & Obst. 9: 5, 1914.

If hydatiform mole is a condition in which there are characteristic microscopic and gross changes in the chorionic villi. Macroscopic examination shows proliferation of the trophoblastic elements, an occasional change in the stroma, and an increase in the syncytium. (Cord) there is a characteristic grape-like mass of vesicles.

In the author's opinion this condition is much more frequent than has been generally supposed. A tumor may be confined to a small area of the placenta and careful examination is necessary to discover the presence of few vesicles, many cases must be removed. Among 3500 abortions at Bellevue Hospital in New York City there are twenty-one hydatiform moles (0.6 per cent). The mortality has been variously estimated at from 1 to 25 per cent. At Bellevue Hospital it is 9 per cent. The causes of death are hemorrhage, sepsis and chorio-epithelioma.

Chorio-epithelioma is an extremely rare condition. This has been concluded by hydatiform mole to a large percentage of cases. It is well established fact, but this does not permit the conclusion that a large percentage of hydatiform moles are followed by chorio-epithelioma. In eleven years there has been but one chorio-epithelioma at Bellevue Hospital and this is a doubtful case.

In view of the rarity of chorio-epithelioma and the frequency of hydatiform mole the mole should be treated mainly to prevent hemorrhage and sepsis. As the possibility of the development of chorio-epithelioma is remote, such radical treatment as hysterectomy is not necessary in all cases of hydatiform mole. Curettage also should be avoided as it is impossible to remove the deeper part of the vesicles in this way and there is danger that the uterine wall has been thinned by the growth.

If the larger percentage of cases will be successfully terminated by the manual removal of the hydatiform mole. In the event of irregular bleeding following this procedure laparotomy with hysterectomy should be performed. This will permit thorough inspection of the uterus and adnexa. If followed by hysterectomy if evidence of chorio-epithelioma is discovered. In cases of chorio-epithelioma radiation should be effective as both a prophylactic and

therapeutic measure. The bilateral ovarian cysts which are associated with both hydatiform mole and chorio epithelioma in over 80 per cent of the cases are short lived, show no evidence of malignancy and undergo regression after the removal of the uterine condition. H. W. FINK, M.D.

Burns, J. W. Chronic Endocervicitis and Its Treatment. *J. Obst. & Gynec. B. & Emp.* 9, 1911, 619.

This article is based on a study of eighty-four cases of uncomplicated endocervicitis.

This condition is most common in multiparae between 30 and 40 years of age, next most common in women between 20 and 30 years of age and least common in young unmarried girls. It arises from direct infection of the cervical canal as in gonorrhea, infection of cervical wounds caused by labor or operation, or as in the young girl with intact hymen, the direct upward spread of infection from the external genitals. In the cases of virgin masturbation may play a part.

As a rule the vaginal discharge is of thick white mucoid consistency but it may be thin, white, yellow or green. Usually it is most profuse in the morning and before and after menstruation. General debility, headache, anemia, backache, and constipation are other symptoms. Menstrual function is not influenced. In one third of the cases there is pain in the left side. Complaint is frequently made of pruritus vulvæ. Thirty-seven per cent of the married women in the author's series were sterile; 30 per cent had had one or more children and 30 mis-carriages, 27 per cent had had one or more children and one or more miscarriages, and 1 per cent had had miscarriages only.

Endocervicitis is of two forms—the acute and the chronic. The acute form is usually found in gonorrhea and following infection of injuries of the cervix due to labor or operation. The chronic form may follow the acute or may arise as a chronic condition *per se*. The cervix may appear quite normal except for the thick tenacious, yellowish mucus issuing from the os. Hypertrophy, erosion may or may not be present. Microscopic section shows: (1) hypertrophy of the glands; (2) blocked gland ducts; (3) small dilated cysts lined with low cubical epithelium; (4) areas in which the pavement epithelium has been shed; (5) round-cell infiltration; and (6) varying degree of fibrosis.

A bacteriological examination of the cervix in sixty-six cases showed positive growth of bacteria in culture media. The end result in four hours in 9.5 per cent. The staphylococcus albus was found in 45.45 per cent, the staphylococcus aureus in 5 per cent, streptococci in 6.66 per cent and bacillus coli in 13.63 per cent.

The staphylococcus albus was associated with the bacillus coli, streptococci, the gonococcus and micrococci catarrhalis and the trigenus in about 20 per cent of the cases. Dermalitis was present in 3 per cent.

With regard to the treatment the author discusses: (1) drugs and caustics; (2) curettage; (3) douching; (4) trachelorrhaphy; (5) cones; and (6) ionization. Ionization is the only scientific method of applying antiseptics to the cervical canal. Of thirteen cases in which the first wash was positive only seven remained positive after ion application of 30 ma. for ten minutes only five remained positive after the second application, and only two or positive after the third application. The technique of the treatment is as follows:

The patient is placed in the dorsal position with the knees drawn up and a medium sized glass Ferguson speculum is passed until the cervix fits into its upper end. The os is then dried and cleaned by means of small sterilized gauze swabs. A swab for bacteriological purposes is taken from the cervical canal and the reaction of the canal is determined by means of litmus paper. A malleable zinc sound is then passed to the cervix for 1/2 in. and the speculum is filled with 0.5 per cent zinc sulphate solution. The zinc rod is connected with the positive pole of the galvanic arc and the negative pole applied to the patient thigh by means of a metal plate superimposed on two or three pairs of gauze and lint wrung out in warm water. The current is then turned on raised to 20 ma. and allowed to run for 5 minutes. Between the end of this time the os and the cervical canal will be coated with thick white deposit. The zinc sulphate is then mopped out with gauze soaked in 0.005 crystals and is introduced into the vagina. The gauze is removed in ten to fifteen hours.

This treatment is repeated every seven days for three weeks during which time no douching or inter-course is permitted. Three applications are usually sufficient to render the cervical canal sterile.

Some of the patients complain of slight backache for the first eight hours. In one case in which there was history of gonorrhea eighteen months previously acute attack of pelvic inflammation was set up in forty-eight hours. In one case of retroflexion menorrhagia was made worse.

Of the sixteen patients with erosion three were definitely cured (no discharge for three to four months following the treatment). One developed acute pelvic inflammation eight were benefited as far as the discharge was concerned but the erosion remained. Three were not benefited at all and three did not take the full course of treatment.

Of the twenty patients without erosion thirteen were cured (no discharge for one to four months). Two were not benefited (one had had a supra-pubic terectomy previously and the other showed post-climacteric changes in the uterus and vagina). One became worse (retroflexion) and four did not take the full course of treatment.

It appears from these results that cases with erosion are improved but not cured while those without erosion are greatly benefited. Cases complicated by pelvic inflammation or displacement of the uterus are not suitable for ionization treatment.



entral fixation. Because of the severe criticism of the operation at this time it was discarded.

The author believes the uterus should be conserved in women in the child bearing age for the following reasons:

1. Many women who have not borne children feel that they cannot justify their existence if all hope of reproduction is gone.

2. Stereotomy is disturbing from a sexual point of view.

3. In women under 45 years of age child bearing is possible if the uterus is conserved and the ovaries are healthy.

4. The removal of the uterus has the lymphatic

Bonney reports 100 cases of myomectomy in which from one to three fibroids were removed. The location of the tumor is of little importance. If necessary the endometrium may be opened. Cervical fibroids are the most difficult problem. Malignant degeneration, edema and suppuration due to sepsis are contra-indications. If pregnancy is complicated or superfluously placental fibroids can be removed without great danger of essential abortion. The removal of more deeply situated tumors is complicated, though the risk of bleeding is difficult to control. The recent development of the cauterizer for the excision of fibroids.

Menorrhagia and profound anemia contraindicate myomectomy but moderate menorrhagic anemia does not provided all the tumors are removed and the remaining uterus is not too large for involution. In all cases of fibroids the myometrium of the uterine cavity should be opened to make certain that no small fibroid on the mucous or amniotic surface poses a great thickening of the endometrium is left. For the scraping away of thickened endometrium the author has found very efficacious the steel finger nail formerly used for the removal of adenoids.

1. Bonney cases the mortality of myomectomy was 1 per cent. One patient died of hemorrhage and another of shock. The chief danger is hemorrhage. In no case so far as is known has there been recurrence of fibroids. 11 of the women have become pregnant one or more times since the operation.

With regard to the technique of the operation the author states that all tumors are removed through a single incision in the anterior wall. The fibroid most accessible through this incision is attacked first and when this has been nuked the next most accessible is reached by a secondary incision begun in the wall of the cavity left by the first tumor. If the tumors are located in the posterior wall he goes through the cavity of the uterus. Redundant tissue is cut and the cut edges are beveled inward to facilitate approximation in closing. The uterus is closed with mattress and superficial sutures. In some cases temporary fixation of the uterus may be necessary. To control the ovarian vessels during the operation the author applies ring forceps on the

Group 4 includes the postoperative recurrences. Of the cases reviewed, ten were in Group 4, thirty three in Group 2, fifty eight in Group 3, and five in Group 4. All of the patients in Group 1, two, 15, 12 of those in Group 2, four of those in Group 3, and two of those in Group 4 are still living.

V. E. DUNN M.D.

### ADNEAL AND PERI-UTERINE CONDITIONS

Hood, M. R. Fibromata of the Ovary. *Surg. Gynec. & Obst.* 9 3, xxxvi, 247.

In the Mayo Clinic from January, 1900, to August 1, 1921, fifty five fibromata of the ovary not associated with other pathologic conditions were removed at operation. The diagnosis was confirmed by microscopic examination in every case. During the same period a total of 4,175 tumors of the ovary were removed. One hundred and forty nine (3.5 per cent) of these were fibromata, but ninety four were associated with cysts, either benign or malignant or fibromata of the uterus, etc. for which the operation was performed. The incidence of ovarian fibroma is usually given in the literature as 1 per cent.

Infection, hemorrhage, hyperemia, inflammatory processes, and keloid formation may be factors in the origin of fibromata of the ovary. They are found at any age after puberty but more often develop near the time of the menopause. In the series of cases reviewed the youngest patient was 8 years of age and the oldest 73. Twenty-six were menstruating, three were at the menopause, and twenty-six had passed the menopause. As a rule menstruation is not affected by this condition, but the menopause may be delayed.

The symptoms are subjective and objective. The most common subjective symptoms are pain, dysuria, and frequency, constipation, and pain on defecation. Objectively the tumor is usually movable, but may be fixed by adhesions. The growth had been present for from a few months to thirty years, although in some cases the patient was unaware of even a large tumor.

Pain was present in thirty three of the fifty five cases. The tumor was movable fifty one. As a rule it was present in fourteen (5 per cent) in amounts varying from 5 to 16 liters. In fifty three cases the tumor was unilateral.

The diagnosis depends on the presence of a unilateral tumor of the pelvis, non-fluctuating, and separate from the uterus. In the differential diagnosis, pedunculated fibromyoma of the uterus, solid carcinoma, and solid sarcoma of the ovary, dermoid, etc. must be considered. In the presence of infection, carcinoma of the liver, abdominal malignancy, tuberculous, etc. must be considered.

The treatment is surgical. Radium and the roentgen ray should be reserved for cases in which operation is contra-indicated on account of co-existent conditions such as senile cardiac lesions and nephritis.

The prognosis is good following surgical removal. Pre-operatively and when the patient refuses opera-

tion, the prognosis is influenced by the possibility of twisted pedicle, general peritonitis, or malignant degeneration.

The following conclusions are drawn:

Fibromata of the ovary may occur at any age after puberty. They constitute 3.5 per cent of all ovarian tumors.

1. There may be comparatively few symptoms and the tumor may be present long time without the patient's knowledge.

2. Ascites and tumor of the pelvis do not necessarily mean abdominal malignancy.

3. The treatment is surgical. All ovarian tumors should be operated on as soon as diagnosed.

4. The prognosis is good after operation.

5. Subsequent menstrual function is as normal as can be expected following unilateral ovariectomy.

6. Normal pregnancy may occur in women of child bearing age who only one ovary or one ovary and no tube has been removed.

### EXTERNAL GENITALIA

Markoff, N. W. Bilateral Resection of the Pudendal Nerves for Vulval Pruritus (Doppelseitige Resektion der Nervi pudendi interni bei Pruritus alvus). *Russk. Gynec. Monatsh.* 9 1, 83.

The author reports 34 cases of vulval pruritus in a virgin 43 years of age which proved refractory to numerous therapeutic measures. Finally the method of Kocher was used. Both internal pudendal nerves were exposed by dissection and the branches running to the genitalia were tied out with forceps. This resulted in anesthesia of the labia, but did not affect the normal sensibility of the anal region. The pruritus entirely disappeared. (Lorenz) (2)

### MISCELLANEOUS

Curtis, A. H. The Diagnosis and Relief of Sterility. *J. Am. Med. Ass.* 9 3, lxxx, 203.

Laboratory study combined with clinical evidence leads Curtis to the conclusion that, the absence of clinically demonstrable pelvic pathology, sterility is nearly always due to infection. Detailed study of grossly unaltered or slightly adherent fallopian tubes reveals that the mucosa is often crippled by healed inflammatory changes.

When opening of the abdomen is indicated in cases of sterility, air inflation of the fallopian tubes by means of a Luer syringe is performed as a routine provided active infection is not found. By this simple procedure the presence of otherwise undemonstrable obstructions within the tube may be discovered. Minor strictures may be overcome by forcible syringe pressure, the anatomical limitations of grossly palpable obstruction, possibly amenable to plastic operation, may be more definitely determined and, at the completion of plastic operations on the tube, the patency of the lumen may be tested.

The author finds also that tubal inflation magnifies the regional anatomy, thus facilitating the study of

congenital defect and fetal development in the anal structure. Lane thinks of the perianal cecum as previously unrecognized small diverticula and other deviations from the normal are frequently revealed.

Von Albertini, A.: The Association of Different Malignant Tumors and Tuberculous in the Same Organ (Kombination verschiedener maligner Tumoren mit Tuberkulose im selben Organ). *Schweizer med. Wochenschr.* 9, 1913.

Von Albertini reports an unusual case in which every different kind of malignant tumor and tuberculous are found. This original case is described by Hildebrand in the lung. In this author's bronchial carcinoma of the adeno type associated with carcinoma of the glandular portion of the prostate with abscesses of the prostate. The tumor is surrounded by fresh embryonic tissue.

Very extensive metastases have led to the common belief that there is certain relation between carcinoma and general tuberculous. On the other hand, it may be warned on the basis of the literature and Ribbert's theory that tuberculosis may predispose to the development of carcinoma. The author does not believe that in his case there was any reciprocal relationship between the older tuberculous disease of the prostate and the neighboring carcinoma of the glandular portion of the prostate.

But he does think there may have been relationship between the sarcomatous nodules in the prostate of the tumor and the embryonic tissue in it. He holds the view that the tumor obstructed the local lymphatic circulation so that the tubercle bacilli escaped into the lymphatic system and their development is proved.

Ref. 131

Willheim, H.: An Explanation of the Axial Twisting of Fetal Organs and the Twisting, Encoiling, and Knotting of the Embryonic Cord. (Zur Erklärung der Achsenverbiegung, Umdrehung, Verknüpfung und Verknotung der Fetusorgane). *Munch. med. Wochenschr.* 1913, 37.

Willheim takes as an example the malformation of the heart. He attributes the twisting of the pedicle to habituation of the heart or nodal terminals alone. The twisting of the pedicle of an abdominal tumor occurs more or less of the more fluid content of the tumor. The axial twisting of the embryo and that of the peritoneal organs or periparturient uterus and the uterus in the process of delivery is explained in the same way. The twisting tendency is opposed by friction, which may prevent axial twisting. The twisting of the human umbilical cord as it relates to the transmission of the virus of the mother.

LANGE 20

## OBSTETRICS

### PREGNANCY AND ITS COMPLICATIONS

Wetz, W. E. True Eclampsia and Renal Eclampsia  
*J. Michigan State M. Soc.* 9:3, xxi, 7

Renal eclampsia is divided into two types: that following chronic interstitial nephritis and that following chronic parenchymatous nephritis.

A history of nephritis may or may not be given in a case of renal eclampsia. Not infrequently renal injury occurred in infancy following an infectious disease or has not been recognized, though present during a period of illness antedating pregnancy by years. In cases of renal eclampsia due to interstitial nephritis the first half of pregnancy is characterized by a high blood pressure, polyuria, low specific gravity of the urine, very slight albuminuria, and, rarely, the presence of casts in the urine. The functional capacity of the kidney is decreased early and the decrease becomes more marked as the toxemia increases. Nocturia is usually present. There is slight or no edema. As pregnancy advances especially during the last four months, there is considerable increase over the average high blood pressure for the patient. The systolic pressure commonly rises to between 200 and 300 mm. After delivery the drop in pressure is not great, the high average present before pregnancy being maintained. Cardiac hypertrophy is almost always present. There is tendency to cerebral hemorrhage as well as retinal hemorrhage and optic disc edema. There are probably convulsions. The blood examination usually shows an increase of non-protein nitrogen. The uric acid increases first, then the urea, and last the creatinin, just as in uremia. Before the onset of convulsions subjective signs particularly amaurosis are present. These women frequently miscarry or give birth to premature fullborn infants without convulsions. After delivery all the cardinal symptoms of chronic interstitial nephritis remain.

Renal eclampsia due to chronic parenchymatous nephritis follows a different course from that resulting from chronic interstitial nephritis. There is usually a history of nephritis of the tubular type. In the severe cases there are typical symptoms of this condition before pregnancy begins. These consist of lightly increased blood pressure, a pasty complexion, slight anemia, slight edema, decrease in the urinary output, and the presence of casts and considerable amount of albumin in the urine. When the renal damage is slight these symptoms may be absent or too poorly developed to attract the notice of the medical attendant. The blood pressure at the beginning of pregnancy may be so little above normal as to deceive regarding the presence of renal damage. The pressure runs the typical curve of latency as in true eclampsia, retaining the nor-

mal for the patient after recovery. The pressure does not rise so high as in the other forms of toxemia and the peak attains a level which is lower than that of true eclampsia and much lower than that of renal eclampsia of the glomerular type.

Edema is the most prominent symptom of this type. If it is not present at the beginning of pregnancy it appears during the first few months. Usually it begins in the feet and gradually rises to the trunk. Edema of the face and hands develops as the condition advances. As the kidney fails in function anasarca develops. Edema of the lungs is apt to appear suddenly. After recovery there is gradual resorption of the fluid. During the stage of increment the retention of fluid in the body causes a decided increase in weight. With recovery there is loss of eight up to 60 or 70 lbs. Abnormal urinary symptoms are always present at the beginning of pregnancy. Serum albumin is found in varying quantities from trace to very heavy deposit. As renal insufficiency develops the percentage of albumin greatly increases. As edema develops the output of urine is decreased. Casts are found in considerable numbers. At the stage of greatest insufficiency red blood cells are usually found in the urine. Phenolsulphonephthalein tests indicate very low renal functioning capacity. In marked cases albuminuria remittens develops. There is a tendency for pregnancy to end prematurely. Recovery after the termination of pregnancy leaves the patient with characteristic symptoms of parenchymatous nephritis.

It is not always possible to distinguish the two types of renal eclampsia. Cases of true eclampsia are difficult to differentiate from renal eclampsia because they come under the observation of the obstetrician at the height of the disease, but true eclampsia is not difficult to diagnose if one is able to follow the case from the beginning of pregnancy through labor and the puerperium. The development of the toxemia during pregnancy and the recession to normal after delivery are very characteristic. True eclampsia is difficult to prevent, but the milder type can be controlled to a degree sufficient to prevent convulsions.

The prognosis is always graver when convulsions and coma develop. Women recovering from convulsive seizures return to their normal physical condition without impairment of vascular or renal function. Future pregnancies are not subject to eclamptic toxemia and should terminate favorably for the mother and child. The fetal prognosis is grave even when convulsions do not occur.

Proper prenatal care will prevent most convulsive seizures and almost eliminate maternal mortality. Individualization must be the shibboleth in the care

fall toxic cases in late pregnancy. As soon as possible the type of toxicosis should be determined. The care follows the lines of prophylaxis.

### C H D in MD

Davidson, H. J. A New Procedure in the Treatment of Eclampsia. *S. of G. and Obs.* 1933, 33:14, 30.

In this article the author presents additional evidence of the value of giving large amounts of fluid by mouth in the treatment of eclampsia.

When water is given by hypodermocentesis it adds to the stagnant supertoxic fluids already in the tissues and tissue spaces is absorbed slowly and reaches the liver and kidneys fractionally. When given by rectum it is slowly absorbed, is retained, enters the hemorrhoidal and inferior mesenteric circulation from viscera with poor absorption and passes only in part by way of the portal. Water given by intravenous administration is disseminated throughout the systemic circulation reaching the portal circulation greatly diluted and in fractional parts after having passed through two sets of capillaries, those of the lung and those of the splanchnic area. Water given by way of the stomach is absorbed directly into the portal system and conveyed in highest concentration to the liver yielding the greatest amount of electrolyte in highest concentration in minimum of time. It is a significant fact that in health water is excreted by the kidney more promptly than it is given by mouth than it is given in other ways. A further study of the biochemistry of water was found that it is not easily excreted by the kidney until it has been acted upon by the liver by way of the portal circulation. A surprisingly large quantity will be eliminated in brief time. That most of the water taken by mouth is absorbed into the portal circulation is evident from the fact that however much is ingested, the stools do not become watery.

The author's treatment in postpartum eclampsia consists in first giving a large dose of morphine by hypodermic injection, 0.5 to 1 gr. repeated as indicated. In 15 to 30 hours 2 to 5 liters of water is introduced into the stomach through the tube. The larger quantity unless signs of itching supervene in which case the tube is quickly withdrawn. Regurgitation or vomiting has never occurred in the author's cases and he has never given less than 1 liter in some instances the quantity has approached 5 liters.

In total of more than seven cases he has never recovered a drop of urine introduced four hours previously. One to one and half ounces of Epinephrine is given twice in the next four hours and 30 gr. of potassium acetate and citrate or some alkaline diuretic is administered with each grange. Excess bedding, clothing, artificial heat, hot packs, and bleeding are all discarded. By the method described, perspiration is obtained more promptly and far more copious than by the old procedures.

The simplicity of the procedure makes efficient treatment possible in the poorest home. The first

aidence is combated by means of opium, pinene, hot stupes, and enemata. Cardiac stimulation is given if indicated, and spinal puncture is done if vision is affected and the EEG shows evidence of the dish. In cases of prepartum eclampsia convulsions the author regards it as advisable to use the duodenal tube as the stomach probably will not retain 500 liters of water 1000 while it is easy to introduce that amount into the duodenum in very short time. The tube may be left in as if attendants can prevent its withdrawal.

In the series of 10 cases there were no maternal deaths. One child was lost because following the cesarean section necessary for its delivery the physicians were so intent upon the mother that they failed to give the nurses explicit instructions regarding its care. This child died after a convulsion when it was only four hours old. C H D in MD.

Murray R. D.: Uterine Fibromyosarcoma Complicating Pregnancy. *Minnesota Med.* 9, 1:1, 75.

The relative frequency of uterine fibromyosarcoma is one to every eight white women and one to every three colored women. Fibromyosarcoma are probably one of the causes of sterility. The literature

cases of fibromyosarcoma complicating pregnancy. Most women with uterine fibromyosarcoma complicating pregnancy have no symptoms, but as most of those in the series sought advice on account of ill health, the percentage having symptoms was rather high. Pelvic or low abdominal discomfort was the chief complaint, this being present in 75 per cent.

Occasionally it is impossible to establish the diagnosis of early pregnancy in the presence of a large tumor. The importance of a careful history of the menstrual flow and of the rapidity of enlargement of the tumor is emphasized. In cases of doubtful diagnosis a waiting policy is recommended. The effect of pregnancy on fibromyosarcoma are mentioned, namely, an increase in size with occasional incarceration of the tumor, torsion, degeneration, etc. The effects of fibromyosarcoma on pregnancy may be miscarriage, hemorrhage, dystocia, or postpartal complications.

The treatment of these cases is expected and operative. Expectant treatment was given in 44 per cent of the cases, a report of which records sixteen miscarriages, ten premature labors, and thirty-six living babies. A follow-up of these cases revealed that only seventeen had operations for the tumor after confinement. The operative treatment included myomectomy in fifteen cases and cesarean or Porro cesarean operation in eleven cases. There were seven hysterectomies, three on term containing macerated fetuses in cases in which pregnancy was suspected but not definitely diagnosed until the term containing a degenerated tumor had been removed and opened and two in cases in which pregnancy was not suspected until the tumor and fetus had been removed. From January 9 to January 9 there were 463 hysterectomies for benign uterine tumors and 741 myomectomies on non-pregnant uteri.

The author draws the following conclusions:

Most women with fibromyomas of the uterus pass through pregnancy and confinement without alarming symptoms and may be treated expectantly.

A careful history of the menstrual flow with special note of the exact date and description of the last menstrual period, is of the utmost diagnostic importance in the examination of women with fibromyomas of the uterus especially if the tumor is enlarging rapidly.

If there is the least doubt concerning the possibility of pregnancy the diagnosis should be delayed for several weeks or months if necessary. Less the symptoms are such that delay is dangerous.

An operation for fibromyoma of the uterus associated with pregnancy is sometimes indicated before the period of viability. This may be an abdominal exploration or myomectomy. Exploration of this type of tumor might be made more freely in myomectomy is sometimes definitely indicated and the indication of myomectomy following it is not unduly high. Hysterectomy is rarely indicated before the period of viability and should be resorted to only when the symptoms are alarming. It has not been necessary to delay by resorting in prior to the period of viability in any case in which diagnosis of fibromyoma complicating pregnancy with living fetus is established.

The operation of electrocoagulation operation is indicated in retro-cervical or cervical section at term.

Arrey, L. B. The Cause of Tubal Pregnancy and Tubal Twisting. *Am J Obst Gynec* 9: 38.

The production of twins, separate or conjoined and all non-hereditary malformations of organs and parts are reducible to a single causal factor, namely, improperly timed developmental arrest. This generalization constitutes one of the most notable contributions to modern embryology.

The fertilized ovum ordinarily takes a week or more in its passage to the uterus. During this period it does not normally become attached to the uterine tube. Any change which delays it in its progress favors tubal pregnancy. Impediments include abnormal uterine curvature, double fallopian tubes, adhesions, derangement of the mucosal folds (follicular salpingitis), epithelial diverticula, and impairment of the ciliated cells. Delay may also occur after migration from the opposite ovary. Since tubal implantation is definitely associated with preceding inflammatory changes, it follows that the mucosa has been injured but that the time implantation is possible the inflammation must be largely healed. After the ovum is taken up by the mucous membrane at the outer end of the tube, the ciliated cells may be delayed in its progress until it becomes too large to pass into the uterus through the narrow portion of the tube. In other cases it wanders into blood pockets or epithelial diverticula.

More common than is transported to the middle of the tube is here inflammation and follicular salpingitis are most common and there becomes lodged because the ciliated cells carry it no further.

When blocked the ovum may attack the tubal wall. If the meantime it has attained a later stage of development than is usual in implantation. Therefore if such delayed implantation occurs with the establishment of tardy or inadequate cytotrophoblastic relations at the critical moment for twinning, the embryonic axes assert themselves, as in the fish, chick, and mammal and monozygotic twins result.

This sequence of events is assumed from the publication of Storkard's discovery of the known condition of the tube and ovum in tubal pregnancy and helps to account rationally for the preponderance of single ovum twin pregnancies in the tube as compared to the uterus.

The production of uterine monozygotic twins and monsters is doubtless closely allied with, or even indirectly dependent upon, the same tubal conditions. A nearly healed or structurally modified tube may delay or the tube in the uterus, although tardy inflammation of the uterine mucosa alone may produce the same result. To what extent these factors operate separately and in combination must remain unsettled.

There is demonstrable frequency of faulty implantation in tubal pregnancies. Under such conditions Mall failed to find typical decidua, hence the possibility of checking hemorrhage by the formation of a dam between the lips of the illi and the eroded mucosa is foregone. Numerous hemorrhages result which form old clots between the villi. Even the best specimens frequently show such extensive hemorrhage around the chorion and such marked degeneration of the villi that it is wonder the zygote continues to grow normally. Permanent or temporary setbacks occurring while the chorion is struggling to overcome natural deficiencies in its nidus are sufficient to account both for excessive twinning and for the observed double frequency of malformations in these specimens over the uterine group.

Studies of normal and pathologic tubal implantation convinced Mall that the primary cause is a factor of such monsters as faulty implantation which prevents an adequate transfer of nutriment. Stockard agrees regarding the primary element but from his experimentation is forced to believe the causal cause is lack of sufficient oxygen.

E. L. CONNELL, M.D.

Hawley, L. M. Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy. *Surg Gynec & Obst* 93, 336-343.

The proper time for operation in cases of collapse due to ruptured ectopic pregnancy is still in dispute. Of 824 cases of ruptured ectopic pregnancy reviewed by the author 87 showed collapse. One hundred and thirteen of these urgent cases were operated upon immediately. Of the remaining seventy-four

patients, ten died of hemorrhage unoperated upon. Three of the ten, through errors in diagnosis, did not receive regular palliative treatment. Omitting these three, the number of deaths in critical cases treated expectantly was seven (50 per cent).

The Medical Examiner's Office has recorded twenty-one deaths from hemorrhage in the last four years. The records of the Board of Health of the Borough of Manhattan show that in 1923 there were twenty deaths from ectopic gestation, and that five of the twenty women died of hemorrhage unoperated upon. Fatal hemorrhage therefore occurs with sufficient frequency to warrant an attempt at immediate operation to prevent it.

In 13 cases operated upon immediately there were ten deaths, a mortality of 88 per cent. It would seem that better results were obtained from the immediate operation than from expectant treatment and deferred operation. In recent years methods of treatment have been so greatly improved that advocates of either procedure are loath to use statistics more than ten years old. In the twenty-one critical cases operated upon at the New York Hospital during the past six years there was one death. This was due to cerebral embolism and pneumonia and occurred on the fourth day after the operation. H. W. FINE, M.D.

Good F. L., and Richards, T. K. Ovarian Pregnancy. *Surg. Gynec. & Obst.* 9, 3, 1924, 30.

The authors' patient complained of pain in the lower abdomen and loins. Her temperature, pulse and blood pressure were normal. She had had one previous full-term pregnancy. Amenorrhea began thirteen months before her entrance into the hospital and persisted for eight months. For the past five months the periods had been regular. Physical examination was essentially negative, except for the presence of a tumor the size of six or seven months' pregnancy in the lower mid portion of the abdomen. The cervix was not taken up and the os admitted one finger.

At operation the uterus was found normal in size and anterior to a tumor associated with the left ovary. The right tube and ovary were normal. The tumor was adherent to the lower end of the broad ligament and bladder in front and to the omentum and intestines. It appeared to be a large ovarian cyst with pedicle thicker than normal. When the sac of the tumor was opened, full-term fetus was rounded by foul smelling puriform amniotic fluid was exposed. It was impossible to find any ovarian tissue on the left side.

The specimen was slightly oval in shape measuring 2 by 10 by 11 cm. and weighing 370 gm. (5 1/2 lbs.). The fetus was well developed. The legs, hands, and finger nails were perfectly formed and there was no evidence of gill clefts or other embryonic structures indicating prematurity. The placenta was attached to the inner wall of the mass at the end opposite the head. Microscopic sections taken from many places showed nothing but dense fibrous tissue corpora

lutea, and a few distended ovarian follicles. In one series of sections a cross section of the product was found. The tube was intact but the fibrinated end was spread out over the mass. Apparently the fibrinated end had become attached to the ovary at some previous time so that when the ovum became impregnated and the ovary enlarged, the tube became stretched across the surface of the organ and was caught in the fibrous tissue eventually formed.

H. W. FINE, M.D.

## LABOR AND ITS COMPLICATIONS

Haynes, L. W. Acute Complete Inversion of the Uterus. *J. M. Assoc. State M. Soc.* 9, 3, 1924, 5.

One of the important predisposing causes of acute complete inversion of the uterus is to be found in the fundal attachment of the placenta, as first suggested by Thoms. Haynes believes, however, that too great emphasis has been given to errors in the conduct of labor for if undue pressure on a relaxed uterus from above or too great traction on the cord were of great importance, a would hear of many more cases than we do. If his figures the author has collected are of any value they show that the condition is becoming more frequent in spite of continued improvement in obstetrical technique.

Inversion has occurred twice in subsequent labors in the same patient when all precautions were taken to prevent it. Carruthers reports two inversions in the same woman in consecutive labors. This could lead to the assumption that in some cases there is a special predisposition.

The diagnosis of acute complete inversion is not difficult. As a rule the process of inversion is complete in few seconds. One object symptom is pain. In the case reported by the author the patient as under either anaesthesia but she made several sharp cries as if in great agony. In cases of mild subacute and incomplete inversion this symptom is not often present.

The second symptom is that of shock out of all proportion to the amount of blood lost. The pulse becomes small and quick. Some writers attribute the collapse to the reduction of pressure in the abdomen. Hoffman's opinion this not good explanation. Herman has suggested that it is due to stimulation of the uterus and sudden exposure of the genital internal crural surface.

In earlier years about three of every four women so affected died. More recently most writers give the figures as one-fourth.

The author considers the treatment under two separate headings: (1) when shock is severe and (2) when shock is not severe. In severe shock he removes the placenta if it is attached and gently presses the uterus into the groin. The hemorrhage is stopped by hot saline douche by going to cross perineum and if necessary by obstructing the uterus just below the cervix with part of sterile rubber tubing. The usual treatment for shock is then given. When the patient has rallied

ufficiently replacement is attempted. Deep ether anesthesia should be used. The lithotomy position is helpful. The left hand is placed over the lower abdomen while the right hand is passed into the vagina behind the uterus, grasping it and gently pushing upward and forward toward the left hand. If necessary the pressure is kept up for ten to twenty minutes. In cases in which such manœuvres are not successful it is best to pack the vagina or use a bag or repousser. When these fail, gynecological procedure is necessary.

When shock is slight, the uterus should be replaced at once if possible. C. H. DAVIS, M.D.

Waldstein, E. The Classical Cesarean Section under Local Anesthesia with Temporary Fixation of the Uterus (Klassische Kaiserschnitt mit Lokalanästhesie mit temporärer Fixation des Uterus) *Wien. Med. Wochenschr.* 93, xxv, 83.

In 1914, Traugott and Juné reported on cesarean sections they performed under local anesthesia. No doubt this has been done frequently since the fact has not been reported in every case.

The author reports three cases in which the general condition (severe pulmonary tuberculosis in one and decompensated mitral stenosis in two) made it necessary to perform cesarean section under local anesthesia. After the administration 100 gm of morphine the abdominal skin and the parietal peritoneum were infiltrated with 50 to 60 cm of 0.5 per cent solution of novocaine with the addition of a few drops of drenaline solution. It is very important to prevent the protrusion of the abdominal contents during the operation. Therefore the applied tenacula to the uterus before incising it as in this way he was able to close off the wound in the abdominal wall as if with a pad and to prevent the entrance of amniotic fluid into the abdominal cavity and traction on the uterine ligaments.

SCHUBERT (Z)

#### NEW BORN

Greenhill, J. P. The Association of Fetal Monstruities and Deformities with Placenta Previa. *Surg. Gynec. & Obst.* 93, xxxv, 7.

Ten fifteen cases of the association of fetal monstruities with placenta previa which he found reported in the literature the author adds six others, including 10 of his own.

In explanation of such cases Greenhill states that for some reason the ovum is implanted in the lower uterine segment, that when this occurs the relation

between the placenta and the fetus is faulty and that the faulty relationship is responsible for the arrest of development.

Thirteen of the twenty-one monsters mentioned in this article showed cranial or intracranial defects. According to Mall, the heart or the central nervous system is the first to be destroyed in the embryo.

In conclusion the statement is made that since fetal monsters are not infrequently associated with placenta previa, it is advisable, when cesarean section is contemplated in cases of placenta previa, to attempt to ascertain by physical and X-ray examination whether the fetus is deformed or not.

H. W. FARR, M.D.

Waverlinck. Intraperitoneal Infusion (Ueber intraperitoneale Infusionen). *Deutsche med. Wochenschr.* 9, xlviii, 577.

The author used intraperitoneal infusion at the Children's Clinic at Düsseldorf for the quick administration of water impregnated urinals. Seventy-two infants were treated in this manner and more than 100 injections were given. Sixty of the infants died and twenty recovered. In one case peritonitis and in another shock developed. The condition for which the treatment was given was in most cases severe intoxication, typhoid fever and dysentery. In dermatitis or sepsis, subcutaneous infusion or drip infusion was chosen.

In the intraperitoneal infusion the site of injection is the middle or lower third of the line from the navel to the spinous process of the ilium. The skin is disinfected with alcohol, ether or iodine. A 100- to 200-cm syringe fitted with a long injection tube with its point cut off short and a rubber tube or connecting piece is used. The skin is not divided with a scalpel or scissors. The layers of the abdominal wall are penetrated by slight pressure. The fluid injected is physiological salt solution, Klinger's solution or less frequently a 1 per cent solution of glucose. The youngest infants are given from 100 to 200 cm and older children 400 cm. After the injection, hot packs are applied to the hypogastrium, and adrenalin and caffeine are given.

Although it does not always save life in cases of severe intestinal disturbances, the author believes that the intraperitoneal infusion of fluid is to be preferred to subcutaneous administration because of its simplicity, certainty and painlessness. The danger of peritonitis is slight even in the most severe cases in which the resistance of the body is low. Strict asepsis, however, is essential.

OVETIAS (Z)



# GENITO URINARY SURGERY

## ADRENAL, KIDNEY AND URETER

**Iturza, H.** A Case of Bilateral Subacute Suppurative Pneumococcal Paranephritis (Lin Fall vom bekrenstigten, subakuter eitriger Paranephritis pneumococcica) *Wochschr. f. urol. Chir.* 9, 2, 21

The author reports a case terminating fatally in which there was moderate fever associated with puffiness of the face, dyspnea, cramp-like abdominal pain, and anuria. Cystoscopic examination showed an obstruction in the left ureter, the right ureter was normal.

At autopsy gelatinous, suppurative inflammation of the capsule was found around both kidneys; there was also pyelonephritis. Pneumococci were the cause of this unusual type of suppuration. The fact that the process ran a mild course for months was probably due to the nature of the excitant.

ROSE (Z)

**Reese, N. P.** A New Method of Making Ureteropyelograms. *Surg. Gynec. & Obs.* 9, 3, 1919, 274

The disadvantages of the technique described are that it is simple, the ureter is filled from below without disturbance of its natural course by the passage of the catheter, and reflux of solution about the catheter is prevented.

A 22 spindle about 5 mm in diameter is placed on the whistle-tip catheter about 1.5 cm from the tip. The catheter is threaded back through the cystoscope in the usual way of passing; as tips described by Harris and Huisman, and the instrument is introduced, the catheter with the bulb being passed into the ureter so be studied so that the bulb is held by the bladder wall. The tip of the whistle tip catheter is then permitted to enter the ureter. The other side is also catheterized, urine being collected from each for study. The patient's shoulders are elevated slightly and a 14 by 17 X-ray plate is placed under the back so that it inclines downward at an angle of about 15 to 25 degrees. The ureter and pelvis are then gently filled in the usual manner.

If the patient is flat on his back the upper ureter does not fill, probably because after crossing the iliac crest, the fluid flows rapidly to the pelvis and causes the pain of distention, prohibiting further injection. The Trendelenburg position permits the injection. The Trendelenburg position permits the kidney to fall upward and thus disturbs its usual position and does not give true information. After the picture is taken the catheter may be passed up or if the bulb interferes, another catheter may be passed to drain the fluid in place of the opposite one. The bulb may be removed. However, the fluid usually flows back more quickly when the catheter is low in the ureter than when the older method is used.

By this technique accurate information regarding structure or kink can be obtained and obscure causes of pain can be located. C. R. O'CONNOR, M.D.

**Fullerton, A.** Arches and Folds of Renal Origin. *Canadian M. Ass. J.* 10, 3, 224, 25

The author reviewed the records of over 1,500 successive cystoscopies to determine whether the condition of the kidney or ureter or the site of the lesion could be correlated with pain of a particular type or distribution. He found that the most serious disease of the kidney may not cause any pain whatever and that on the other hand, very slight pathology may be associated with almost unbearable agony, also that the same condition may cause only slight discomfort in one case while in another it causes pain of very severe character radiating to the utmost terminations of the peripheral nerves.

Pressure on the normal kidney produces pain of a searing character which is less severe but similar to that of pressure on the testis or ovary. The pelvis and ureter are highly sensitive. Distension of the pelvis is definitely painful. Certain reflex phenomena, such as nausea, vomiting, pallor and cold extremities associated with disturbance of the pulse or respiration, commonly accompany the pain in the renal pelvis. In pathological conditions the sensitivity of the kidney and ureter may be profoundly altered.

Papan and Ambard classify renal pain as follows: (1) that due to mechanical or traumatic causes such as distension of the ureter, pelvis, and calices, distension of the pararenal mass in the capsule by coagulation of edema of the kidney, the contact of a foreign body with the wall of the pelvis or calices, dragging of the pedicle of the kidney, compression of the nerves (most of the pain, however is reflex or of toxic nature), pelvisclerosis of the kidney. (2) inflammatory conditions such as lesions of the pelvis and calices, as in pyelonephritis, lesions of the pararenal mass as in pyelonephritis, and lesions of the pararenal cellular tissue as in paranephritis and paranephritic abscess.

Papan and Ambard are of the opinion that renal pain usually arises in the renal pelvis. In cases of calices, hydronephrosis, movable kidney, renal tubular cancer, or renal hamatoma, distension of the ureter is manifested by renal colic due to distension of the pelvis. Pain in the kidney itself is general of moderate intensity except in case of inflammation, lesion which it may become very severe.

The fact that the most varied pathological conditions may give rise to almost identical symptoms suggest that common sense may be present in all.

namely distension of the renal pelvis by obstruction. This obstruction may be due to calculus, a kink, a thickened ureter or blood clot. The intensity of the pain is no index whatever of the severity of the lesion, a very slight kink of the ureter may produce more severe pain than an extensive hydronephrosis. The direction of the radiation of the pain is usually toward some portion of the lower extremity but sometimes to the groin, the testis, or labia majora. Not infrequently the pain radiates to the opposite renal region, and occasionally is felt solely on the presumably healthy side. In the so-called Dietl crises the pain may be due to torsion of the pedicle linking of the ureter or dragging upon the pylorus, gall bladder or other abdominal structure. It may be suggestive of an acute abdominal condition with rapidity. A typical attack of renal colic is usually easy to diagnose, but occasionally the physician will encounter cases in which every examination fails to make the conclusion certain. This suggests that in exceptional cases extra renal conditions may be responsible for colic similar to that arising from renal causes. In many cases the pain of renal origin must be looked upon as referred pain, its distribution not necessarily giving any clue to the location of the lesion in the urinary tract.

Abdominal examination will reveal displacement, deformities, or enlargements of the kidneys visible in the renal region, tenderness, rigidity or areas of hyperesthesia. Rectal or sigmoid examination may locate a calculus in the lower end of the ureter, thickening of the ureter, tenderness, or other abnormality. Negative urinalyses do not exclude renal disease. A small aseptic tube may be present in the absence of blood, pus or albumin in the urine. In hydronephrosis the usual tests may show normal urine, and at the time of examination pyonephrosis may be blocked. The X-ray examination if properly done, may reveal alterations in the position, shape and size of the kidneys in addition to opacities. Cystoscopy may demonstrate alterations in the shape, size, and surroundings of the ureteral orifices and changes in the rhythm and character of the efflux. Ureteral catheterization will show the character of the urine from each side and any alteration of the relative specific gravities. The divided kidney function test with indigo carmine or phenol sulphophthalein may give valuable information. The ureteral catheter will demonstrate narrowing or patency of the ureter and pyelography will show the shape and size of the pelvis and calices, the presence and relations of foreign bodies, and the position, direction, and caliber of the ureter. If these methods fail to establish a diagnosis an exploratory operation will be necessary.

**Renal calculus.** In cases of renal calculus the pain is frequent, severe and of varied character. Occasionally it may be due to the passage of crystals of oxalate of calcium. Frequency of urination occurs especially during the attacks of pain and the severe attacks are very frequently characterized by reflex sweating, pallor and cold sweats.

**Renal tuberculosis.** In tuberculosis of the kidney pain is not a cardinal symptom. It was present in fewer than half of the author's cases, and where there was usually thickening of the ureter as well as very extensive destruction of the kidney substance. The pain is probably due to obstruction causing intra-pelvic pressure but the chronicity of the disease allows of more gradual distension than that occurring in cases of stone.

**Pyelitis.** In pyelitis pain is very frequent. The cut cases are characterized usually by gross fever, vomiting, pain and tenderness, and sometimes by palpable swelling of the affected organ and muscular rigidity. The pain is usually more fixed and constant than that occurring in cases of calculus and tuberculosis and not so severe as that due to calculus. It is caused probably by the passage of purulent coagula along the ureter.

**Hydronephrosis.** In hydronephrosis the conditions are most favorable for the development of renal colic via obstruction and distension of the renal pelvis. A frequent history is that of pain and tumor in the side often associated with vomiting. In some of these cases an anomalous renal artery extends across the ureter like a bow string constricting it and causing obstruction and pain by dilating the renal pelvis. In some cases the pain is of recent development, being due to kinking of the uretero-pelvic junction resulting ultimately from the gradual distension.

**Renal tumor.** In cases of renal tumor pain may be entirely absent but as present in about 50 per cent of the author's cases. It ranges in character from soreness, dragging pain, or tenderness to very severe renal colic. In most of the latter cases it appeared to be due to blood clot in the pelvis or ureter.

**Verruoid kidneys.** Pain is often present in cases of verruoid kidney but as this condition is so often associated with other evidences of vasculopathy it is difficult to apportion the responsibility among the various organs. The diagnosis can usually be made by means of pyelography.

**Other causes.** It must be borne in mind that renal pain may be due to some condition of the bladder or urethra as in cases of obstructive growth or stricture of the urethra. Also to be considered are certain rare conditions such as certain forms of chronic nephritis, infarcts, hydatid cysts in which small cysts or sometimes passed, their cysts of the kidney and horseshoe kidney.

**Treatment.** The treatment includes, of course removal of the cause when possible, but certain ill-defined renal neuralgias the usual methods are often either insufficient or excessive as Papan and Amberg have pointed out. While decapsulation, nephrotomy and nephropexy sometimes fail to effect a cure nephrectomy is too drastic. Papan and Amberg have suggested resection of the nerves of the kidney. This is done after careful exposure of the renal pedicle and dissection of the vessels.

Major R. H. The Use of Creatinin as Test of Renal Function. *J Am Med Ass* 1923 LXIX, 384

In normal persons and in persons suffering from various diseases a throat renal lesion the intravenous injection of 0.5 gm of creatinin as followed by an increased excretion of urine in one hour amounting to three times that excreted during the hour preceding the injection. The total excretion at the end of 6 hours amounted 15 times that of the hour before the injection.

In chronic nephritis the kidney fails to respond in this manner. In the cases studied the increase was less than 50 per cent. In number no increase was noted. H. A. M. KILMER M.D.

Barney J. D. Gonococcal Infection of the Kidney. *J Urol* 1923 10, 127

This article is based upon a case of gonococcal infection of the kidney which is of interest because of the complete pathological and bacteriological study made. According to the author it is an case of gonococcal infection of the kidney have been reported in the literature but in only four or five was the kidney at died at operation or autopsy.

Before coming under his observation the author's patient had been subjected to an epididymotomy. A cystoscopic examination was made because of pain in his back. Redness and edema of the left urethral orifice were found. The urine obtained from the left kidney by urethral catheter showed intra cellular diplococci (Nephrectomy) was done. The kidney was about the size of pullet egg. The renal pelvis was thin and greatly dilated. The ureter as normal. Recovery as successful.

HENRY L. KARNICAN M.D.

Ball, W. G. Some Cystoscopic Appearances of Tuberculosis of the Urinary Tract. *Bull J Surg* 1923 1, 325

The purpose of this article is to describe some of the pathologic changes which may be observed in the bladder in cases of genito-urinary tuberculosis.

The author calls attention to the extreme rarity of primary tuberculosis of the bladder. Many writers deny the existence of such a condition and it is generally agreed that in about 80 to 90 per cent of cases of renal tuberculosis the primary focus of infection is in the kidney.

Symptoms indicating an involvement of the kidney are of slow development and may be absent altogether even when the kidney has been destroyed. As the first evidence of the disease is often dysuria associated with frequent micturition the latter is recognized the appearance of the condition in the bladder by cystoscopic examination is of great importance in the diagnosis and especially in determining which kidney is affected.

The author uses general anesthetic so long as cystoscopic examination when tuberculosis infection is suspected. He cautions against over distention of the bladder in such cases in order to prevent hemorrhage and irreparable damage such

as the lighting up of latent lesion or the introduction of a secondary infection which might result from even slight trauma.

Excellent illustrations are included in the article to show the various points made in the discussion of the different aspects of renal tuberculosis and to demonstrate the character of the lesion in the early stages of bladder involvement.

The earliest cystoscopic finding is the discharge of blood, pus, or caseous material from one or both urethral orifices. The author contends that the persistence of hematuria and pyuria observed in the cystoscope as coming from one kidney fully justifies exploration of that kidney.

Broadly speaking, the degree of involvement of the bladder wall is an indication of the extent of the disease of the kidney. Ball does not agree with the general view that patients often exhibit referent symptoms of renal irritation prior to the appearance of bladder lesions. In his own cases he has usually been able to find a change even such as prostatic enlargement, although it does not necessarily exhibit the characteristics of a tuberculous lesion. He believes it possible however that lesions of the lower end of the ureter may give rise to referent symptoms in the absence of involvement of the bladder mucosa.

The early and later changes of lesions in the bladder are more or less fully described. One of the most striking illustrations also as observed in the bladder of man complaining of cystic symptoms who had been subjected to the removal of the right testicle for tuberculous disease several months previously. At the time this picture was made there was hard nodular seminal vesicle under the aid of the ureter. Attempts to prove that the kidney was infected were negative.

LOWEN F. H. M.D.

Chetwood, C. H. The Treatment of Pyelitis. *J Urol* 1923 10, 87

This article deals with the treatment of pyelitis with special regard. Attention is called to the fact that old salvarsan is of no value. Mention is made of work previously done by Necker, Hall, and then by Reimick and others. The technique is the usual method employed. The solution used is freshly prepared in sterile boiled and distilled water. The average initial dose is 0.5 gm of the drug 5 frequent dosage according to effect runs from as little as 0.5 gm to much as 0.5 gm. The total number of doses is usually four. There are 24 hour intervals between the doses.

Ten cases are reported in which this form of treatment proved effective. (K. C. M.D.)

Himmels, F. Experimental Hydronephrosis: The Necessity of Contemporary Hypertrophy and Distal Atrophy to Repair. *J Am Med Ass* 1923

Experiments conducted by the author not only confirmed the fact that renal recovery is complete

istery hypertrophy effect a counterbalance after unilateral nephrectomy but demonstrated also that in unilateral diseases without nephrectomy an additional factor renal competition, is active in the final anatomical readjustment. Activity is just as essential for renal growth as for muscle hypertrophy. Progress inactivity leads to a diffuse renal atrophy. On the other hand, an overwhelming demand for work produces renal inactivity and renal atrophy would be demonstrable in such cases if death did not occur from renal insufficiency.

The significance of renal reserve power and compensatory hypertrophy and of renal competition and atrophy in relation to reparative operations on the kidney is obvious. The poor results of repair procedures in hydronephrosis are not always due to technical failures. Attempts to repair a unilateral hydronephrosis when there is a complete compensatory hypertrophy on the opposite side are always certain to fail, and if the diseased side has been greatly injured or infected or the repair procedure is imperfect, success is not certain even if there is partial compensation on the normal side. In bilateral disease conservative surgery is always indicated and it is necessary to repair the two kidneys by two different operations. The second operation cannot be delayed too long because the initial reparative operation may have placed this kidney in such a favorable condition as to allow it to undergo complete compensatory hypertrophy in which case atrophy will surely result on the unoperated side.

LOUIS NEWCOMB, M.D.

Watson, E. M. Spontaneous Healing in Destructive Hydronephrosis. Report of Two Cases. *Bull. Buffalo Gen. Hosp.* Buffalo 9 3 8.

This article is summarized as follows:

Two cases are reported showing cystoscopic and radiographic evidence of healed renal disease with reduced renal function and absence of active infection. Both cases give history of severe illness in earlier life which may have been complicated by acute renal infection. The evidence it bears suggests spontaneous healing of renal infection in both cases, with permanently reduced renal function and fibrotic changes in the kidney structure indicating process of repair.

GILBERT J. THOMAS, M.D.

Kempermeier, O. F. A. Hilbert. Unrecognized Mode of Origin of Congenital Renal Cysts. *Surg. Gynec. & Obst.* 9 3, xxxvi, 308.

To determine the cause of congenital renal cysts the author made a microscopic study of the embryological development of the kidney of human fetuses. He found that in fetal life there is normally at first characterized by the presence of merous cystic renal tubules. This normal process is converted into a pathologic condition if the tubules do not grow at the proper time and continue to grow to the detriment of the adjacent normal structures.

THOMAS F. FINER, M.D.

Crawford, R. H. Polycystic Kidney. *Surg. Gynec. & Obst.* 9 3, xxxvi, 85.

In a case of bilateral cystic kidney the author discovered hereditary tendency. The patient had three sons and four daughters; one was found to have a polycystic kidney on exploratory examination but is still alive. Three of the seven died of uremia due to polycystic kidney. In the patient's family, in which there were nine children, eight are living but all have small palpable kidney tumors. Three of the latter have had kidney operations. The author's patient died from uremia following drainage of the cysts.

Polycystic kidney is congenital and practically all bilateral. It rarely plays an important rôle. Nephrectomy is not indicated, even though one kidney appears normal, because the remaining kidney is almost invariably becomes cystic.

THOMAS F. FINER, M.D.

Kretschmer, H. L. Echinococcus Disease of the Kidney. *Surg. Gynec. & Obst.* 9 3, xxxvi, 96.

Echinococcus infection confined entirely to the kidney is rare in the literature of the United States and Canada. Kretschmer was able to find only seven cases of echinococcus in the kidney in all of Europe.

The case reported in this article was that of a male Greek, 30 years of age, who complained of pain in the region of the right kidney, frequency of urination, pain on urination, hematuria, and loss of weight. These symptoms began one year ago with an attack of hematuria lasting 10 weeks. Two days after this attack he passed a small round body the size of a pea which he described as soft and containing small particles of gravel. Two weeks after the first attack he returned he had a second attack, but there had been none since then. During the year he had had it at intervals lasting for several days.

Kidney and bladder cultures were negative. Phenolsulphophtalein appeared six and one-half minutes on the right side and 15 minutes on the left. The kidneys were not palpable or tender. There was an emphysema of 8 per cent. The roentgen examination showed a shadow near the upper pole of the right kidney. At operation this proved to be an area of calcification. When the right kidney was exposed its upper half as found to be occupied by a firm mass 30 cm. in diameter which contained many small cysts. Nephrectomy was done.

Ten months after the operation an echinococcus fixation test in human cyst fluid was negative. The treatment of choice is nephrectomy.

THOMAS F. FINER, M.D.

Cumming, R. F. Leucoplakia of the Renal Pelvis. *Surg. Gynec. & Obst.* 9 3, xxxvi, 89.

Leucoplakia of the renal pelvis is rare. The bladder is more frequently involved and the condition is readily recognized by means of the cystoscope.

The normal transitional epithelium is replaced by stratified squamous epithelium showing various degrees of keratinization.

The etiology has not been established. Syphilis and alcohol have a relation to leukoplakia in other parts of the body but are not related to its renal phase.

The symptoms are those of related conditions and, in addition, the painless passage of epithelial membrane.

Nephrectomy is advised for advanced cases. In the case reported in this article the entire renal pelvis was lined by a dry scaly substance resembling brain.

Thomas F. Fiverson, M.D.

Stevens, W. E. The Diagnosis and Treatment of Malignant Tumors of the Kidney. *California Med J.* 31: 9, xxi, 60.

Hematuria, pain, and a palpable tumor are generally recognized as the three cardinal signs of malignant tumor of the kidney. To these fourth should be added, viz a characteristic deformity of the renal pelvis revealed by pyelography. In a review of 43 cases of malignant kidney tumors reported in the literature Stevens found that hematuria, pain, and enlargement of the kidney were present at the time of examination only 45 per cent but pyelography revealed deformity of the kidney pelvis or calices in almost every instance in which it was used.

Deformities revealed in the pyelogram such as narrowing or displacement of the pelvis with or without elongation and narrowing of the calices are almost always characteristic of renal tumor. Visualization of the gastro-intestinal tract by air inflation or by barium meals or enemas is often of great assistance in determining the location of an abdominal mass. Other aids in the diagnosis are the occasional presence of neoplastic cells in the urine and the profuse bleeding which sometimes follows the traumatism caused by the ureteral catheter.

The diagnosis of the histologic type of a malignant tumor of the kidney is sometimes impossible but in many cases can be made from careful study of the symptoms together with the cystoscopic and roentgenographic findings.

As the prognosis of all malignant tumors is practically hopeless without operation, the kidney should be removed in almost every instance unless definite metastases are found. Occasionally the lymphatic nodes are of the alter operation. If the fatty capsule is of aid, it should be removed with the kidney. This necessarily includes removal of the suprarenal capsule. The lumbar or extraperitoneal route is preferable for the removal of small or medium sized tumors and the abdominal route for the removal of large growths. In all operations the renal vein should be ligated as far as possible from the kidney. Early ligation prevents the entrance of the malignant cells into the general circulation following the manipulation of the kidney. In cases of papillary epithelioma of the renal pelvis the entire ureter should be removed with the kidney as rule since involvement of the ureter will occur later if it is not already present.

Loewen, Gern, M.D.

Haber, F. The Operative Treatment of Cystic Dilatation of the Vesical End of the Ureter (Zur operativen Behandlung des Ureterischen Pericystes). *Zentralblatt für Chirurgie* 19: 31, 3.

After a detailed description of the disease picture of cystic dilatation of the vesical end of the ureter, Haber reports a case in which Bartsch performed an operation consisting of the insertion of ureteral catheter, suprapubic cystotomy longitudinal splitting of the cystic ureter over the catheter, removal of the resulting flap of mucosa in situ, and suture of the ureteral and vesical mucosa. Recovery followed.

Endovesical treatment by slitting, externalization, or thermocoagulation comes up for consideration in cases of small, thin-walled dilatations without complications in the bladder or the upper urinary passages but in cases of larger dilatations, infection, nephrothiasis and retrothiasis, the transvesical procedure is necessary. The article is supplemented by a bibliography. *Vierteljahrsschrift* 17.

Herrman, L. Accidental Bilateral Occlusion of the Ureters. *J. Urol.* 9: 12, 51.

The case reported was that of a woman 31 years of age who was subjected to suprapubic cystectomy for chronic cholecystitis inflammation with pelvic peritonitis. Forty-eight hours after the operation examination showed marked changes. Both ureteral openings, the presence of urine in the bladder and obstruction of both ureters in about their vesical openings. The pelvis was immediately explored. The ureters were located on the pelvic wall lateral to the stump of the uterus. The left ureter was dilated to the size of the little finger. On following this ureter toward the bladder a constriction due to an encircling cystic ligature was found. This ligature was cut and through minute incisions made in the ureter probe as passed into the bladder demonstrated the patency of the lower segment of the tube. The right ureter which was dilated to the size of the index finger, exhibited active peristalsis and reversed peristalsis was elicited by a peculiar snail-like action. Through minute incisions probe detected a obstruction due to one ligature and an inch below this a second obstruction due to another ligature. Ureteral catheters were left in position for drainage. During removal of the uterus there was no leakage of urine from the incisions in the ureter. Three months later the urine as normal and sterile catheters passed easily in each pelvis and there was no evidence of renal or ureteral dilatation.

From review of the literature it is evident that bilateral ureteral occlusion is rare. The author has collected and tabulated twenty-four cases. In fifteen cases (63 per cent) the occlusion was due to encircling ligatures and in twelve the ureters were ligated and completely obstructed by the traction of ligatures. In thirteen cases the ureters were completely obstructed by pelvic crura following the

application of the Percy cautery and in two they were caught in vaginal clamps.

In bilateral cases anuria is usually the only symptom referable to the ureteral injury during the early stages of the obstruction but the patient may find more that as in the bladder prior to the injury. The time at which the symptoms of uremia appear depends largely but is of no diagnostic importance as the ureteral injury should be recognized long before their development.

The obstructed ureter has little tendency to open without operation, and no instance of bilateral occlusion relieved spontaneously has been found in the literature. Temporary occlusion due to clamping is usually followed by fistula formation.

The choice of operative or other treatment for the relief of bilateral ureteral obstruction will depend upon the cause of the obstruction, the preference of the operator and possibly to some extent the time interval since the receipt of the injury.

The author gives a statistical analysis of the various operative procedures which have been employed and concludes that deligation is the procedure of choice. The objection to deligation based on technical grounds is not well founded. Its advantages are: (1) a lower mortality than nephrostomy (5 per cent as compared with 50 per cent); (2) better final results (complete cure in 75 per cent of the cases as compared with cure in 50 per cent).

The article contains brief case histories and statistical tables.

H. A. FOWLER, M.D.

Barney J. D. Observations on the Kinks of the Ureter. *J. Urol.* 9:3 18, 8.

Barney has recently observed five cases presenting symptoms of renal or ureteral calculus in which definite kink of the ureter was demonstrated by the ureterogram as the cause of the symptoms. Operation in four cases to correct this condition as followed by complete relief both of the ureteral deformity and the associated symptoms. The early cases are reported in some detail with roentgenograms made before and after operation.

In the second case the ureter showed no abnormality when the catheter was in the kidney, but the ureterogram made when the catheter was pulled

ell down showed a very tortuous ureter with a marked S shaped curve at point opposite the lower pole of the kidney. At operation this kink was

reproduced by injection of the ureter through a catheter previously placed. The deformity could be corrected by lifting the lower pole of the kidney outward. A modified suspension operation was done using the capsule as hammock. A ureterogram made subsequently showed the ureter to be normal. The patient has remained free from symptoms.

Barney concludes that these few cases demonstrate beyond any reasonable doubt that kinks or sharp and abnormal curves of the ureter may develop in the male or female on either side and in any portion of the ureter but usually occur in its upper third. Such kinks can be demonstrated only

in ureterograms with the catheter lying low down in the ureter when the catheter is high it acts as a splint and obliterates the kink. These abnormalities are probably caused by two factors, namely, due mobility of the kidney and lack of support of the ureter as regards lateral motion due to weakness or herniation of its normal sheath.

When the condition has been present for a considerable time (years) hydronephrosis of greater or less degree often without infection is to be expected. In the early stages the kink is not fixed in its position and there is no accompanying dilatation of the renal pelvis. The symptoms are identical with those produced by renal or ureteral calculus. It is probable that permanent alterations in the course of the ureter are induced sooner or later by infection. Because of this and because the continuance of the condition must invariably give rise to hydronephrosis, early operation should be advised.

H. A. FOWLER, M.D.

Hunner G. L. Conservative Renal Surgery Associated with Ureteral Structure Work. *J. Urol.* 9:3 97.

More general recognition of ureteral structure as one of the most common intra-abdominal or intrapelvic lesions would obviate much unnecessary abdominal and pelvic surgery. Free kidney drainage through the dilatation of ureteral strictures will relieve under a variety of conditions such as migration and gastro-intestinal disturbances which defy other methods of treatment.

Large hydronephroses sometimes even those which are infected may be cured by simple dilatation of ureteral stricture and adequate renal drainage. Structure of the ureter may be present even though No. 5 or 6 renal catheter reveal no obstruction. Therefore catheters Nos. 7, 8 and 9 should be used. The pyelo-ureterogram also may fail to give the necessary information.

There are three types of cases of hydronephrosis due to ureteral structure: (1) those showing equal dilatation of the upper ureter and renal pelvis and an apparent angle in the ureter a few centimeters below the kidney; (2) those with apparently straight ureter which enters the kidney pelvis abruptly near its lower border where shadow-graph finds it trapped in the kidney; and (3) those showing fusiform dilatation of the ureter above the structure area and a relatively greater dilatation of the pelvis the ureter tending to prolapse with the kidney.

Salt solution should be used, the first instillation of the renal pelvis it will not cure severe retraction if trapped. I accept the cases of nervous patients who have drunk large quantities of water hydronephrosis would be suspected if the urine flow through the catheter steadily streams. A change of position will sometimes fail or drainage shadow-graph find should be drained off before the patient returned to bed. Overflowing of the renal pelvis is dangerous. A low functioning hydro-



By dissecting off part of the bladder wall and using the prepuce, a closure may be perfected which will permit the wearing of a urinary receptacle rendering the patient reasonably comfortable. The mortality of this procedure is zero.

In the author's case the testicles were erythematous, he turned up a large flap of scrotum to cover the defect and brought the penis through a perforation in the flap. A urinary cup was then used.

KILLGUS SPERRY, M.D.

Greenhaw H. L. A Review of 153 Cases of Bladder Stones Removed by Lithotripsy. *Urological Med.* 1912, 11, 77.

The contra-indications for lithotripsy are:  
1. A stone so large that the jaws of a lithotripter will not embrace it.

2. A stone so nearly filling a contracted or diseased bladder that the lithotripter jaws cannot be opened.

3. Prostatic hypertrophy, vesical tumor, diverticulum, or complications which would necessitate a cystostomy following the removal of the stone. Occasionally moderate degrees of prostatic hypertrophy may be relieved by an irritating stone.

4. The presence of a stone with a nucleus of such a physical character that it cannot readily be freed from the lithotripter. Fragments of catheters, wax, and gum bougies occasionally become the nucleus of bladder stones.

5. Cases in which the stone is attached to the wall of the bladder and those in which previous operation has been performed on the bladder or the adjacent structures.

6. Stones with sharp foreign body such as a corpus or knife blade, as nucleus unless the cystoscope shows them to be free in the bladder.

Of 606 cases of vesical calculus examined at the Mayo Clinic a diagnosis of stone was made by means of the roentgen ray in 345 of 449 (76.8 per cent) and by cystoscopic examination in 415 of 453 (91.8 per cent). A positive diagnosis of stone was made by roentgen-ray or cystoscopic examination in both in 537 cases (88.66 per cent).

With regard to the prevention of recurrence of bladder stones the author makes the following statements:

1. Roentgen ray and cystoscopic examinations must be made after litholapaxy to be sure that all fragments are removed.

2. Infected kidneys should be treated by pelvis lavage or nephrectomy if necessary, and focal infections should be removed.

3. Stones in the kidney should be removed.

4. Cystitis should be relieved by lavage and topical applications.

5. Causes of retention such as enlargement of the prostate or stricture must be removed if possible. If they cannot be removed, as in the case in the stone bladder the regular removal of residual urine should be practiced.

6. Diverticula retaining urine should be removed.

7. Hygienic and dietetic measures benefiting the general health should be adopted.

The use of caudal anesthesia greatly increases the scope of litholapaxy. It is essential to remember that the sacral nerves innervate not only the urethra and prostatic area but also the musculature of the bladder. Consequently some type of suction apparatus is necessary to remove the fragments of stone as the paralyzed wall of the bladder is unable to expel them.

Kidd, F. The Treatment of Epithelial Tumors of the Urinary Bladder. *Chicago Med. Rec.* 9, 3, 27.

In this most interesting andoluminous article based on a consideration of 68 cases personally observed and treated, Kidd discusses most minutely the symptoms and the various operative methods employed.

If the case is seen early diathermy or a well designed operation may remove all of the local growth. In cases of painless hematuria immediate cystoscopy is indicated.

Kidd has come to the conclusion that some bladder cancers have a tendency to develop papillomatous which is inherent in the entire epithelial membrane. The neoplasms in such cases being entirely new tumors rather than recurrences.

Seventy of every 100 persons with painless hematuria are suffering from a tumor of the bladder or kidney.

Occasionally two other symptoms are met with: (1) pulled ureter or pain in one kidney, caused by the pulling of the tumor on the ureter or blocking it, and (2) the corked urethra, indicated by intermittent interruption of the stream of urine when the tumor becomes caught in the entrance of the deep urethra.

Of eighty patients who came early enough for diathermy or partial cystectomy, forty-one or more than half, are known to be alive and well, one has lived eleven years, and many for seven or eight years. It is probable that fifty-five are alive and well.

With regard to the differential diagnosis between simple and malignant papilloma the author states that he does not approve of removing portions of bladder growths with an operating cystoscope for microscopic study. The risks and inconveniences in such a course outweigh any possible advantage to be gained. In a number of cases the snipping off of portions of living tumor within the bladder is sure to result in the implantation of fresh tumors on other portions of the bladder wall. The determination as to whether the growth is malignant or benign must be made on the basis of clinical findings if the best results are to be obtained.

Special attention is directed to the length of the history, the size and appearance of the tumor, the delicacy and length of the fibrous and the pedicle, the appearance of the bladder in the region of the pedicle, the angleness or multiplicity of the tumors, the feel of the base of the bladder through the rectum.



or vagina. In some cases, the reaction of the tumor to diathermy. Some tumors which look malignant react at once to diathermy while others which appear innocent prove refractory and even though requiring an open operation the latter react as malignant.

Of twenty-one cases traced by the author up to 1922, all others show no signs of any recurrence one in three years, three in eight years, one in six years, six in ten years, four in twelve years. Donegan's cases since treatment it appears, therefore, that the treatment by diathermy gives far more permanent results. It is less apt to give a recurrence than the old open operation. In one of the twenty-one cases there was a recurrence six years and ten years respectively after the treatment the patient were then subjected to an open operation and in two were also cured. The total of seven patients, however, treated for a year or more, remained quite free from recurrence. It is justifiable to assume that they were cured. These patients are considerable by other than those usually showing simple papillomata. The oldest man of 71 has remained well for six years since treatment. The youngest was 21 years.

If a papilloma is seen to be lying high up on the upper all of the bladder, just at the peritoneal reflection, care must be taken with regard to the severity of the treatment when the pedicle has been buried and exposed. In such cases it is safer not to use a snare but in order that the patient's feelings may serve as a guide to the severity of the burning or electrocauterization.

Kidd allows an interval of at least three weeks, and not more than four weeks, between the treatments giving time for all slough to separate. It is not enough time for a fresh growth to occur. In this he does not agree with Beer who carries out the treatment every seven days. After apparent cure the patient should be urged to report at least once a year for cystoscopic examination. A very early recurrence, however small, or a hemorrhage, can be destroyed with one treatment.

Kidd has a new machine designed which is used with a constant current of either 20 or 40 volts, and gives a minute gradation of current from 0 up to at least 2 amperes or more. The spark gap is of remarkable consistency and can be employed continuously for fifteen minutes at a time without over heating. With this machine it is possible to begin each application of current at a very low amperage and gradually increase it to the maximum, so that a maximum of true diathermy heating and consequent coagulation of the deeper parts of the tumor is obtained without charring or gauding on the surface of the tumor.

The author's conclusions are as follows:

1. In cases of papilloma of the bladder of a benign type diathermy as applied through the cystoscope holds out an excellent chance of cure without the risk of opening the bladder. To open the bladder and strip out such tumors should therefore be considered a grave surgical interference.

2. In cases of papilloma of the bladder of doubtful malignancy it is possible for an expert to obtain a certain number of cures by means of diathermy through the cystoscope. Nevertheless if diathermy fails to show an adequate destructive reaction in the tumor after three treatments, the most it should be given up and a total cystectomy should be carried out.

3. In cases of malignant papilloma, early partial or even total cystectomy is an early alternative to a removal of the bladder. Total or partial cystectomy is decided advantage in bladder surgery. It should render the old transurethral operation obsolete except in a few isolated cases. It is an operation of considerable technical difficulty and presents a definite risk, but when successful it lends a higher percentage of true cures than the other type of operation as its principles are based on a firmer pathologic basis. All cases of partial cystectomy should be followed up at regular intervals by means of cystoscopic examination.

4. Total cystectomy has been rendered almost obsolete by partial cystectomy diathermy and should be reserved for cases of multiple or giant papillomata which defies other treatment, and for a few inoperable cases of carcinoma involving both ureteral openings.

5. Utereroscopy presents almost a great risk in total cystectomy. When successful it is a great help. In a few favorable cases it may be used as preliminary to total cystectomy.

6. Radium has not yet justified its substitution for surgery but deserves the closest consideration. The present state of knowledge it has already replaced total cystectomy, that is to say, for cases in which cystectomy would have been considered formerly. Now prefer to use radium treatment, combined perhaps with open incision and deep roentgen therapy. We should cease to remain content with simply draining or leaving alone so-called inoperable cases. The bladder should be opened and one of its corners pinched, either open diathermy or ligature combined with the application of radium emanation glass tubes followed by deep roentgen ray therapy and the cystoscopic application of radium and diathermy.

LOUIS GEORGE WOOD

V. J. G. A. D. Fulgura Ion in the Treatment of Affections of the Lower Genito-Urinary Tract. *Arch. de Med. 17* 1913, 111, 6.

The unipolar fluid current is safest for fulguration because of its limited power of penetration. The Bourget operating cystoscope is the best instrument in the deep urethra as an instrument without break should be used. The high frequency current is a true destructive agent of the desired power which acts through carbonization or electrocoagulation.

If pain is experienced when large bladder tumor is being treated the application in that area should be stopped for the sitting in cases of smaller

tumor, few seconds of intermittent pain are to be expected. Primary hemorrhage is rare. The patient should be forewarned that secondary hemorrhage may occur eight to ten days after the treatment. Colon bacillus pyuria, which is usually present, is often aggravated by fulguration. For this acriflavine is suitable. Retention of urine resulting from the action on the urethral sphincter should be anticipated and, if necessary, drainage by means of a permanent stiff catheter should be established for twenty-four hours. In order to prevent perforation of the bladder the attack should be made from the periphery of the tumor to its base and the treatment should be stopped when the approach to normal tissue is indicated by pain.

The destruction of benign papillary tumors of the bladder is definite and devoid of danger. As the tumor is still small, one or two treatments are usually sufficient. The patient is not confined to bed and an extensive operation is rendered unnecessary. Malignant tumors do not respond to this treatment, a fact of importance in the differential diagnosis.

Chronic conditions of the deep urethra and vesical neck, such as granulomata, sessile polypoid masses, and true polyps, with concomitant infection of the adjacent structures, are amenable to fulguration, and certain cases of prostatic hypertrophy or median lobe enlargement respond to tunneling of the obstruction with the active diathermic electrode with or without the use of Young's punch.

LOUIS NEWELL, M.D.

Cabot, J. A. G. An Unusual Case of Traumatic Urethral Stricture. *J. Am. Med. Ass.* 92, 1917, 397.

The aim of all operative work on the urethra should be the complete restoration of function with a minimum of scar tissue. Cicatricial contraction along the course of the urethra is very difficult to prevent and the chief cause of disappointing results.

In cases of recent injury of the urethra prompt operative interference should be undertaken to control the spread of extravasation. An attempt should be made to repair the rupture and ample drainage should be provided. The after care demands constant and painstaking attention if the formation of excessive scar tissue, which often leads to dense structures, is to be prevented. Infection must be actively combated, and every effort made to establish normal flow of urine through the urethra and prevent the formation of a persistent penile fistula.

In cases of long-standing traumatic stricture the urethra will be impermeable. Therefore the operator must be guided in his choice of procedure entirely by the operative findings. The author reports the case of a man who was injured 10 years previously by a telephone pole which fell upon him. The right ischiopubic ramus was broken and the perineum severely injured. At the time of the accident an external urethrotomy was done and the bladder

drained by perineal tube. Ten years later an external urethrotomy was done on account of a persistent perineal fistula and complete urinary incontinence. The fistula closed temporarily but the incontinence continued and later the fistula reopened. Examination of this case then showed broad scars in the perineum with a fistula in the center. Rectal examination revealed marked adhesions and infiltrations about the membranous urethra and the apex of the prostate. A catheter, as passed into the bladder with difficulty. The residual urine amounted to 300 ccm. The X-ray showed large dilated bladder in which the opaque fluid regurgitated into the posterior and anterior urethra. When the patient stood up the fluid dribbled out of the urethra. Cystoscopic examination showed that the internal sphincter had been torn completely through to the right side.

Two operations were performed, about seven months apart. The first operation was somewhat stormy but perfect functional results were obtained. The patient left the hospital the twenty-fourth day after the second operation. All wounds were firmly closed and good stream of urine was voided at normal intervals. Three months later the patient reported that he was still well and had taken up his former work.

JOHN P. O'NEIL, M.D.

## GENITAL ORGANS

Burney, J. D., Haines, E. F. and Shedd, W. M. Some Results of Prostatectomy. *Chicago U. Rec.* 9, 3, 1914, 554.

The authors have undertaken to trace all the cases of obstructing prostates discharged from the Genitourinary Clinic at the Massachusetts General Hospital. They believe that the results of prostatectomy are too seldom recorded and wish to contribute to the knowledge of what ultimately happens to the prostatectomized patient. Their conclusions are as follows:

1. Persons with an obstructing prostate may live in comparative comfort for several years without operation.

2. Cancer of the prostate, whether operated on or not, may not interfere with the general health and activity for a number of years.

3. While the median perineal operation is frequently followed by extremely satisfactory results, it may and often does result otherwise and its outcome is not so dependable as that of the suprapubic operation.

4. Incontinence of urine, more or less complete, may follow the suprapubic operation, but is less frequent after this procedure than after the perineal operation. Unless the incontinence is very definite and well marked, it may be, and often is, mistaken for marked urgency.

5. The urine eventually becomes free from infection in nearly half the cases.

6. Cloudy urine does not always indicate renal infection; the bladder alone may be involved.

7 The suprapubic wound gives rise to hernia in but a very small percentage of cases, almost all of them those of men who are doing hard physical work.

8 The general health of the patient is generally much improved following post-operative treatment.

9 The size of the urethra gradually decreases after operation, but if put off this the urine may be uninfected, there may be no residual urine and the patient may have no subjective symptoms whatever.

The postoperative nitrogen test shows decrease in the number of milligram per cent. after operation, this probably being due to better drainage of the kidney and improvement in the general condition.

10 On the whole post-operative cases are predictable in regard to the sex function.

Lothar Goss, M.D.

### MISCELLANEOUS

Osborne E. D. Sutherland C. G. Scholl, A. J. and Remnitz L. G. Radio-graphy of the Urinary Tract During the Excretion of Sodium Iodide. *J. Am. M. A.* 9: 111.

After intravenous injection of the body sodium iodide, which is opaque to the roentgen rays, is normally excreted in the urine. Under certain conditions sufficient amounts of sodium may be present in the urinary tract to cast a roentgen shadow. The sodium iodide is given either intravenously or by mouth.

**Intermittent administration.** The patient first gives 1 gm. of potassium iodide by mouth three times a day for 1 day in order to determine whether there is any reaction to the drug. If no symptoms of acute iodism occur the intravenous injection of 1 per cent solution is begun on the third day. Various dosages have been employed ranging from 5 to 20 gm. of 1 per cent solution of chemically pure sodium iodide. 1 roentgen gives a dose of gm. may be given without causing outward symptoms provided the solution is injected slowly. When dose of more than 5 gm. is given, symptoms appear probably because of osmotic changes resulting from large amount of the 1 per cent salt solution.

Satisfactory roentgenograms of the bladder are secured in practically every case. 10 doses of from 5 to 20 gm. given intravenously, 1 gram intravenously every 2 hours of sodium iodide gave fair roentgenogram of the kidneys and ureters in approximately 50 per cent of the cases. The best roentgenograms of the upper urinary tract are obtained 10 doses of from 15 to 20 gm.

The time factor is important. The roentgenograms should be taken one half hour, one hour and 1 to 3 hours after doses of 5, 10, and 20 gm. respectively.

**Administration by mouth.** The best results by this method are obtained by administering 3 gm. of sodium iodide hourly for three hours and taking

the roentgenogram from one to two hours after the last dose.

If the bladder one is to be studied, the administration of from 3 to 5 gm. of sodium iodide without previous preparation is all that is necessary. The roentgenograms are taken three hours after the highest dose of the drug.

Preliminary control roentgenograms are taken before the administration of the sodium iodide. A medium 6 standard Coolidge tube was used. The Kodak of 5 in. and an air distance of 67.5 cm. from the target to the plate. The time used from two to eight seconds according to the thickness of the patient.

Kryer L. D. The Mechanism of the Formation of Urinary Calculi. *Ann. Surg.* 9: 111.

Crystalline precipitation is an abnormal type of crystalline precipitation. Normal urine holds water insoluble crystalline in solution because of the presence of protective colloids. The hydrogen ion concentration has effect on time but is of secondary importance. Kaibara and Nakamura showed that colloidal matter in solution modifies the morphology of crystalline precipitates sometimes changing them from microscopic to a coarser type.

The study of stone formation by the method of Kaibara and Nakamura proved that stone formation may be due to (1) the effect on the crystallization of crystalline matter beyond the power of the urinary colloid to maintain either solution or deposition of isolated single crystal. (2) the effect on the amount of protective colloid in the urine or (3) the precipitation of normal colloid or interference of their protective action by bacterial exudates or foreign colloidal matter present as the result of abnormal metabolism.

The first mechanism of stone formation is experimentally demonstrated by concentrating calcium salts in the urine by repeated abstinence from portions of normal body salt and calcium chloride over period of days. A uric acid calculus is produced and the increasing increase in the morphology of the calculus to crystal changes from normal to fungus spheroidal form and calculus formation begins, the process being terrible.

The second mechanism namely, the production of deficiency of protective colloid in the urine of animals, has thus far been baffling. However, Licht has precipitated phosphates and oxalates from urine by the extraction of colloidal matter. Schale experiment in such stones are formed *in vitro* by adding fibrinogen in the presence of freshly precipitated phosphates, oxalates and carbonates. It also cited as indicating the significance of colloidal factors in stone formation.

The third mechanism namely, interference of the normal protective colloids by bacterial exudates or other foreign colloidal matter has been more

positively demonstrated. Sodium oxalate fed to rabbits produced oxaluria of the octahedron type. Direct infection of the kidneys of animals thus fed by means of attenuated colic bacilli was accompanied by the change of the oxalate crystals to the coalescent spheroidal variety. In several instances fusion of crystals took place with the formation of minute calculi. The author cites the experiments of Rowney and Messner in which calculi were produced by implanting streptococci from the urine of patients with active calculus formation into the devitalized teeth of dogs. These results are explained by the assumption that the bacteria have

specific activity and produce an exudate bringing into the urinary stream foreign colloidal matter which so interferes with the normal colloidal balance of the urine that the deposition of fusing crystals takes place, stone formation occurring as the result.

The author reports the case of a patient who had passed multiple oxalate calculi over a period of years and whose urine, when he entered the Navy Clinic, showed atypical fusing spheroids of krumm calculi.

Teusant C. E. Cystin Calculi. A Complex Surgical Problem. Report of a Case of Multiple Cystin Calculi. *J. Am. Med. Ass.* 9:3 1913 303

Cystin calculi are comparatively rare. Up to 58 only fifty cases of cystinuria had been reported and

in 1916 Kretschmer found the reports of only 7 cases of cystinurias including that of his own, those of 1 in boy.

W. L. and Cunningham report one case of cystin calculus in thirty years of cystinuria. Morris two in six, seven and Thompson three in 14. That cystinuria is constitutional problem and the cause of cystin calculi is well known. According to Abderhalden the metabolism in these cases is almost normal. The stones may be multiple and located in several portions of the urinary tract at the same time. Cystinurias tend to be familial conditions of which there are compiled by Roland ten occurred in five families.

The author reports the case of a married 21 years who referred him with diagnosis of acute pyelitis and provisional diagnosis of cystinuria. At operation moderately inflamed appendix as found. In addition the pyelotomy of stones were removed from the right ureter through an infrapubic opening. Another unusually large stone was found below the pelvis of the kidney but no further operation was done at this time. The total weight of the stones removed

4 gm.  
A subsequent X-ray examination revealed one stone in the left kidney and three in the right. Later both kidneys were operated upon at different times, all stones being removed. The patient made normal recovery.  
JOHN F. O'NEILL, M.D.

# SURGERY OF THE EYE AND EAR

## EYE

Whitman L. H. Pulsating Exophthalmos. *Am J Oph* 4 23 19

Seven cases of pulsating exophthalmos were treated by a three-act operation as reported. They were observed by Whitman or his colleagues. In four of the cases the internal carotid artery was ligated months to a month before operation. In the exophthalmos present the eyeballs were enlarged in the inferior and medial walls. At the first operation the eyeballs were ligated and the eyeballs were pulled over the sclera. The second operation consisted of ligating the internal carotid artery without having had a previous operation. In all the cases the distal symptoms disappeared after the ligation. In three cases the results were two to three months to six months.

The literature on this subject is well reviewed especially in the review of the monograph of de Scheldt and Hoffer. While many cases have been given to the division of the carotid artery, and it has been contended that the only satisfactory exophthalmos should be and only be there is definite opening between the internal carotid artery and the cavernous sinus. This is not recognized as a common fact of surgery. Hoffer reported one case which was followed thirty-one months after the ligation.

Proptosis, pulsation (bilateral) of the eyeballs, bruit and crises are the cardinal symptoms. The vision may be retained by optic nerves and trophic or may remain perfect.

The first treatment of these cases is well reviewed in all methods being mentioned from simple pressure on the carotid to ligation followed by the later orbital operation.

In conclusion the author states that ligation of the internal carotid offers the best result in pulsating exophthalmos from a true common relation between the internal carotid and the cavernous sinus, but recommends that the distal circulation be prepared by daily compression of the neck prior to the ligation. Ligation of the ophthalmic carotid should then be done before the carotid ligation. (Vernon Westcott M.D.)

Arnall W. B. An Experience with Rouse Cases of Foreign Body in the Eyeball. *J Iowa State M Soc* 93 301 4

Three cases of injury to the globe by small pieces of steel are reported by Arnall. In each case the first roentgenogram was negative. Although ophthalmoscopic examination revealed the foreign body in the fundus. Second roentgenograms in each case also showed the foreign body. Removal of the steel was

followed by detachment of the retina and loss of vision. Attention is called to the fact that orbital myoscopy and roentgenograph examinations would have revealed the presence of small foreign bodies in the eye. (Vernon Westcott M.D.)

Chamberlain W. B. The Endonasal Operation on the Lachrymal Sac. *J Ind in Med* 11 93 14

In 1917 when the author reported eight cases of endonasal operation on the lachrymal sac with one failure. In the operated portion cases the endonasal operation is a restoration of physiological function is concerned, though not if there is free of pus. Secondary operations were performed on three cases.

The technique employed was that of West with slight modification.

After preliminary nasal examination and palpation the patient is placed in a supine position with the head tilted back. A three-sided incision is made. The first two incisions are parallel to the floor of the nose and extend as far as possible from the point of the upper lip from the point of attachment of the middle turbinate and the lower from the point opposite the free border of the middle turbinate. For these incisions the right angled hook of Freer is employed. The anterior ends of the incisions are joined by the incision made as a form of possible drainage. The flap formed is elevated submucosally. The patient is held in a position of the head tilted back and on a large piece of gauze between the middle turbinate and the septum. The hook is held out of the field during the removal of the operation by small pledget of gauze.

The post-operative care of the dense ascending process of the upper lip is then attached with chisel and forceps until the nasal wall of the sac is exposed. The sac is recognized by palpation with probe. Surface tissue is removed. The sac is then exposed to the entire nasal aspect. At this point the probe is inserted into the sac through the canaliculus pushing it nasal surface tent like motion toward the septum. A thin scalpel is then inserted between the probe and the lateral nasal wall the outer or free end of the probe being held by the assistant or the operator. The forehead by a strip of adhesive plaster is held. It is possible to retract larger portions of the loose pieces are removed subsequently by means of the smallest forceps of Greenwald. West dictum that the completion of the operation the probe introduced through the canaliculus into the sac must be horizontal. The nose is strictly adhered. When the submucous flap is replaced to upper half covering the sac is

ssected and the lower portion held in position for twenty-four hours by light packing. Subsequently the nose is kept free from crusts until healing takes place. If desired, the sac is irrigated through the canaliculus.

O. M. ROTT, M.D.

Alpert, F. Industrial Eye Injuries. *Ill. St. M. J.* 973, 124, 45.

Alpert discusses the prevention of industrial eye injuries.

Applicants for positions should be given a thorough ocular examination before they are employed. Both central and peripheral vision should be tested and an examination made for slight strabismic irregularities, opacities, evidences of previous disease in the media and fundus and refractive errors. Permanent record of the findings of such examinations should be kept in case they may be needed as evidence in lawsuits to obtain financial remuneration from the corporation for physical injury. Trachoma and other contagious diseases of the eye may be detected and epidemics averted. If by such examination. In addition it will bring an abnormal eye condition to the employer's attention so that he may obtain proper treatment.

The author discusses in detail the proper lighting of shops. The cost of such lighting he gives as approximately 1/4 of 1 percent of man's gross.

Most shops have come to realize that goggles are essential. A glass can be placed in goggles to correct a refractive error.

Proper tools and proper protective devices on machines will reduce the number of eye accidents. Most hammering accidents are caused by using tools with barred or mushroomed edges. Dust particles should be removed from machines and from rooms by an exhaust system. Where molten metals are being poured the goggles should be supplemented by leather masks to protect the face and head. Properly tinted glass should be used by persons working in exceedingly bright light such as that due to electric welding and blast furnaces. This will protect the retina from serious injury.

The so-called shop oculist is one of the greatest enemies to eyesight as he attempts to remove foreign bodies from lids and cornea with dirty hands and poor illumination and instrument.

The vapors in certain industries should be carefully removed or diluted as their inhalation frequently causes blindness. These include the vapors of di-nitro benzene used in the manufacture of aniline dyes, bi-sulphide of carbon used in vulcanizing rubber, the nicotine in tobacco factories, arsenic, lead, carbon monoxide and wood alcohol.

In conclusion the author states that office employees should be given refraction tests by competent oculist.

T. D. ALLEN, M.D.

Landolt, R. A Study on Strabismus. *Am. J. Ophth.* 973, 74, 93.

Landolt attacks the question of strabismus from the standpoint of the central nervous system. He

points out that the innervation of convergence is analogous to the innervation of accommodation. Both eyes receive the same nervous impulse. It is not sufficient for the images to be simultaneously formed at the fovea of both eyes (convergence); they must also be well defined (accommodation). The degree of convergence and accommodation is inversely proportional to the distance of the object from the eyes. In hyperopia the same degree of convergence must be accompanied by greater amount of accommodation corresponding to the degree of hypermetropia.

He author objects to the statement that a person squints with the left eye and the phrase "a left convergent strabismus." He believes it would be better to say "The patient has concomitant convergent strabismus and uses his right eye for fixation." This statement could be in agreement with the etiology of strabismus. He regards amblyopia as the cause rather than the effect of the squint and cites the fact that cataractous eyes do not become amblyopic but have good vision as soon as the cataract is removed. A result of long standing convergent strabismus is limitation of lateral motion especially in the eye which deviates. This is another effect of strabismus.

After proper lenses have been prescribed, the accommodation has been paralyzed, and stereoscopic exercises have been outlined it may be necessary to operate.

For the surgical treatment of convergent, divergent, vertical and paralytic strabismus and for convergence insufficiency the author recommends advancement and condenses tenotomy.

VIRGIL WESCOTT, M.D.

Pickard, R. A Method of Recording Disc Alterations and a Study of the Growth of Normal and Abnormal Disc Cup. *Brit. J. Ophth.* 973, 9, 3.

From study of series of curves and frequency polygons reported in a previous article Pickard concluded that the enlargement of the cup in adult life without symptoms of glaucoma must be considered an effect of pressure and that such cases require careful watching for the development of glaucoma. In this article he outlines his method of drawing and recording the disc and the cup. If inclined to them, he superposes a transparent celluloid plate marked off into 2/10 in squares. Then, by measuring the size of the disc and cup, he calculates the percentage of the area of the entire disc occupied by the cup.

In normal cases the enlargement is toward the temporal side. In primary optic atrophy there is cupping. In chronic glaucoma the enlargement of the cup is in all directions, remains conical, and reaches the temporal border first. Cases of glaucoma in which there is small cup are more painful. The drawing of the disc and cup as part of the routine record of eye cases is strongly recommended.

VIRGIL WESCOTT, M.D.

## EAR

Smith R. M.: Acute Aural Diseases in Children. *Theor. p. 6. 1913. 2 vols.*

The author urges the careful examination of the ear before an operation is pronounced important and also a routine procedure in cases of pneumonia, infantile typhoid, and the exanthemata especially when there is an apparent relapse because frequently a relapse is caused by inflammation of the middle ear.

Attention is directed to the dangers of neglect of the ear (aural sepsis), leading to interference with the bearing of action and of neglect of the suppurative variety being such complete intracranial infections.

The importance of the function of the drum and, when this does not suffice, the value of the operation is emphasized. (J. M. R. in M.D.)

Lawer J. P. R. and A. Wright C.: The Operative Correction of Ear Defect by Epithelial Flaps. (*Report of a Case of Paralytic Deafness*) *Arch. Surg.* 1913, 48, 141.

In cases of complete loss of the bony part of the ear a flap which is larger by one third than the desired lobule and about 0.5 cm. thick is cut from the skin of the neck below the ear and part of the uninfected Stenstrom's mass the size of which is pushed between the skin flap and the secondary wound to obtain an impression of the wound surface. The first impression is then copied in.

The second flap is such that the wound surface is on the outside and the outer of the Thierbach flap occupies the part of the impression which will be exposed in the wound cavity. The mass with the covering epithelium is then fitted into the wound cavity and the edges of the graft are sutured to

those of the wound. The Stenstrom's mass is removed after two or three weeks when the Thierbach flap has become healed in this way the posterior surface of the new ear lobule and the secondary defect are covered with epidermis. Subsequently only slight cosmetic corrections are necessary.

In the correction of defects of the auricle a cartilage framework from the sixth and seventh costal cartilages is used. This is best shaped somewhat after the fashion so that it will not be injured subsequently, and is then placed in a prepared canal under the skin behind the ear. After three to four weeks when the cartilage has healed to the skin flap with some of the cranial pericranium is undermined through curved incisions at the hair line. The Thierbach flap is then the bone which has been freed from pericranium. In the restoration of the lobule in the manner described, an impression with tent mass is taken of the new formed auricle easily. In this way the secondary defect and both surfaces of the new portion of the ear are covered with epithelium. The auricle is large flap along and below is then mobilized by incision and after freshening of the wound is sutured into the defect of the ear so that the corresponding portions of the helix and a tubercle are united with the proper part of the auricle.

The entire auricle is also reconstructed with cartilage from the sixth and seventh costal cartilages. The epithelial cells under the cartilage also flap is applied with thick tent mass and projecting ears are to be made. This is important, as the shrinkage epithelium draws the new ear backward. If there is doubt as to the position of the flap the flap may be directed free gradually with smaller epithelial flaps at intervals of three or four weeks. The procedure is shown in all illustrations.

(J. M. R. in M.D.)

# SURGERY OF THE NOSE THROAT AND MOUTH

## NOSE

Natanson L. N. and Lipakieroff I. B. Perforation of the Nasal Septum in Cocaine Sniffers (Ueber die Perforation des Septum nasali bei Cocainisierern) *Med. wiss. hr. J.* 9 463

Among eighty-six cocaine sniffers, most of whom were prostitutes, the authors found only three who did not have nasal changes due to the cocaine. Seventy-eight they found perforated septum in two as ulcer of the septum, and in three healed ulcers. From a careful investigation of sixty cases the following facts were learned:

1. The presence of the perforation was unknown to the patient.

2. In all cases the perforation in which the cartilaginous portion of the septum. There were no other changes. The small perforations were round, the larger ones oval. The edges were denuded. The lumen of the perforation was frequently occluded by an odorless crust.

3. The sense of smell was preserved but it was diminished.

4. In four cases there was sinking of the nasal cartilage.

5. The palate nasopharynx, and larynx presented no changes.

6. Perforations were found even when the drug had been used only a few weeks.

7. The ages of the sniffers ranged from 4 to 35 years.

8. The dose was 15 or 20 gr of cocaine daily, sometimes even more. The sniffing was indulged in from two months to nine years. The average length of time was between two and three years.

9. Of the sixty-two sniffers twenty-five had latent syphilis, five were in the primary or secondary stage and one had tertiary syphilis. The rest were not syphilitic.

The authors do not believe that syphilis was the cause of the perforation. Histologic examination of the peripheral portions of the perforations presented showed destruction of the hyaline cartilage, degenerative changes in the connective tissue, slight lymphoid infiltration of the submucosa, pronounced ataxia, and narrowing of the blood vessels.

The authors' conclusions are summarized below:

1. In cocaine sniffers, ulceration of the septum develops first and then perforation.

2. The cocaine perforation is localized to the rugous portion of the septum and resembles the perforating ulcer of the septum. When the perforation is large, collapse of the nasal cartilage occurs.

3. Only exceptionally is the use of cocaine harmful.

4. In the diagnosis of perforation of the cartilaginous portion of the septum the possibility that it may be a cocaine perforation should be borne in mind.

5. Cocaine perforations of the septum should be given prominent place in textbooks on rhinology. (Zinn)

Bakker C. and Oudendal A. J. F. A Rare Chondroma of the Nose (Ein seltener Chondrom der Nase) *Stuk. f. d. rh. Rh. d. d.* 9

The case reported by J. J. J. nose of an infant in whom in the course of development a tumor of the nasal septum developed and disarranged the entire anterior portion of the nose. This growth measured 6 by 35 by 4 mm. Within it a necrotic cavity measuring 6 by 3 by 4 mm. The diagnosis was chondroma of the nasal septum.

Histologically the tumor proper could be divided into numerous small jets of cartilage separated by connective tissue. The hyaline cartilage was present in hyaline cartilage. Nowhere there are signs of ossification or calcification. In the necrotic focus the connective tissue partially maintained but showed signs of fresh and old hemorrhage. Signs of chronic inflammation were noted in the diffuse portion of the connective tissue. (Zinn)

Dunham A. and Sherris J. H. Sinus Infection of Lung Infections. *J. Radiol.* 9 3

Of 350 patients referred by the physician as tuberculous the authors found 3 per cent to be suffering from some other infection. And among these non-tuberculous cases the primary focus outside the lungs was the rule in the head. This observation has been so constant that in every case present a non-tuberculous infection the authors examine the sinuses and lungs.

In sinus disease may be present with absolutely no symptom referable to the head of which the patient is aware. Of the 350 patients studied all presented pharyngeal signs over the chest. The differential chest diagnosis is made on the basis of roentgenographic plates of the chest. When no evidence of cephalomaxillary tuberculosis is found the active focus was sought by most careful and complete pharyngeal and nasal examination.

In cases showing definite symptoms of signs pointing to lung infection different from almost all cases calling for every local and low force test applicable. Chiefly of foremost the nasal picture of the best. The diagnosis of the best picture should be done by the patient.

The normal lymphatic system through the lungs which occurs from the paracardiac and the hilum except for small areas immediately under the pleura.



which may drain into the pleural lymphatics, has a vital bearing on the pathology and prognosis of the disease. Of prime importance in the reading of an X-ray chest plate, however, is a thorough understanding of the septa of the lung and their influence on the pathology. When an adult possesses the ordinary amount of resistance the lesions of pulmonary tuberculosis tend to become healed. The lesions of an adult type of pulmonary tuberculosis are the result of repeated infections from without or within. Demerits caused by the pathologic changes of pulmonary tuberculosis and shown on the plate vary in their quality and degree, progressing from the least dense to the heaviest as follows: (1) serous exudate (2) cellular exudate (3) fibrous, (4) caseation (5) calcification. A thorough study of chest plates with this understanding will enable one to read the changes in terms of the actual pathology. Given an acute infection or infarct, the resultant densities shown on the X-ray plate will all be of the same quality because all of the lesions will be in the same pathologic state.

The lung lesions secondary to chronic sinus infection may be characterized as areas of exudate in the lung. Lesions located in the paces all produce perfect clinical picture of incipient pulmonary tuberculosis with fever, cough, expectoration, malaise, loss of weight, blood spitting, and localized rales over the paces. The X-ray picture may show definite localized densities, but when no more densities are present they are of the same quality.

The presence of a non-tuberculous lesion in the lungs having been determined, proper handling of the case will then demand an X-ray examination of the sinuses and the close co-operation of a competent nose and throat specialist. Malignant tumors of the lungs, such as carcinomas or sarcomas, spread by continuity with no respect for septa. In the majority of cases the X-ray plate shows ball-like lesions.

The authors' conclusions are as follows:

1. The first step in the differential diagnosis of lung diseases is to determine whether the lesion is tuberculous or non-tuberculous.

2. In any case of special catarrh, purulent bronchitis, bronchiectasis, or localized areas of pneumonia, a search should be made for infection in the head or throat.

3. The symptoms of incipient pulmonary tuberculosis are the symptoms of a focal infection.

4. A properly interpreted X-ray plate of the chest is the most valuable aid in the differential diagnosis of tuberculous lung lesions and acute infections secondary to sinus disease. DAVID R. BOWEN, M.D.

Dahmann, H. Osteoma of the Accessory Nasal Sinuses. Two New Contributions and Critical Collective Review (Über das Osteom der Nasen Nebenhöhlen. Zwei neue Beiträge und kritische Sammelreferat). *Archiv f. Hals Nasen Ohrenheilk.* p. 4, 30.

The author reviews thirty-six cases of osteoma of the nasal accessory sinuses which have been

reported during the last ten years. Two of his own cases are described in detail.

Dahmann's first case was a previously diagnosed erythroid osteoma. Removal of the tumor resulted in a cure in spite of severe injury of the dura with the escape of cerebrospinal fluid. As the frontal sinuses as normal and the nasal cavity was not opened, there was no infection of the meninges.

In the second case the removal of a very small osteoma in the vicinity of the lacuna cribrosa in a previously healthy person led to meningitis and death because there was free communication between the sinus and the nasal cavity and the meninges are infected by way of the diseased frontal sinus.

In conclusion the author gives a detailed description of the pathogenesis, symptoms, and treatment of osteoma. Bibliography (2).

Meyer, H. Carcinoma of the Ethmoid Bone With New Contributions on Classification in Tumors (Ueber das Carcinom des Siebennas. Mit neuen Beiträgen zur Klassifikation in den Geschwülsten). *Zeitsch. f. Hals Nasen Ohrenheilk.* p. 85.

Among five carcinomata of the ethmoid bone observed during the last year there were three adenocarcinomata, one embryoma carcinoma, and one pavement cell carcinoma. The characteristic histoscopic picture is the displacement of the septum toward the normal side by bluish to grayish red tumor which is superficially ulcerated. Occasionally, if the tumor originates from the posterior ethmoid cells, it is demonstrable also by posterior rhinoscopy. The symptoms—headache, hemorrhage, ocular disturbances, and swelling of the external nose—vary in different cases, and rhinoscopic and roentgenographic examinations do not always give the same findings. Biopsy is very important in the diagnosis therapeutically radical operation and subsequent irradiation are advisable but recurrence is the rule.

The second portion of this article is concerned with interesting anatomical observations on the development of bone by osteoblasts in preformed bones, the neoplastic and metaplastic development of bone in the supporting tissue, the new formation of bone from connective tissue cartilage, and the development of cartilage from gelatinous tissue. SCHWARTZ (2).

Schittler, L. How May the So-Called "Serious Accidents" in the Irrigation of the Antrum of Highmore Be Avoided? (Wie lassen sich die sogenannten Zufälle bei der Nasendouchenirrigation vermeiden?) *Zeitsch. f. Hals Nasen Ohrenheilk.* p. 7.

The author disapproves of the use of sharp needle or trocar-shaped instruments for the puncture of the antrum of Highmore, recommending instead the dull Siebenmann cannula with which the puncture is undertaken by means of the middle nasal meatus. He draws the fol-

1. Most of the serious complications occurring in the course of puncture or irrigation of the antrum of Highmore can be traced to the occurrence of air embolism.

2. A smaller number of these are reflex processes set up by the operative trauma in the medulla oblongata, the sympathetic vagus system and the cerebrum, causing symptoms in the respiratory and circulatory systems similar to those occasionally observed in other operative procedures in the interior of the nose in which air embolism can take as part, and those occurring occasionally as signs of cocaine poisoning.

3. In all of the definitely proved cases of air embolism up to the present time a sharp instrument was used for the puncture or irrigation of the antrum of Highmore. In regard to the origin of the air embolism in the autopsy material available, it must be assumed that the point of the instrument piercing the mucosa of the lateral nasal wall or the antrum of Highmore punctured a vein, direct in fact, of air resulting.

4. The decisive factor in the development of the air embolism is the manner in which the puncture of the antrum of Highmore is done.

5. The use of dull, flexible cannulae almost completely prevents perforation of the mucosa of the antrum of Highmore; no case of air embolism after puncture or irrigation with a dull cannula has yet been reported.

6. The puncture of the antrum of Highmore with the Seibermann cannula through the (ostanella) through the membranous part of the middle nasal meatus, or through an accessory opening is no more difficult technically than other procedures.

B. REICHMANN (7)

## THROAT

Trisler J. H. X-Ray Treatment of Tonsillar and Lymphoid Tissues. *A. Otol Rhinol and Laryngol* 97 2222, 1944

Both lymphatic and embryonic tissues are more easily destroyed by the X-ray than any other living cells. The tonsil is made up largely of lymph tissue and the small fibrous tonsil commonly associated with rheumatism contains lymph follicles, of which 90 per cent are embryonic tissue and the remainder composed with mature lymphocytes. Very small doses of X-ray may be used to promote absorption of the lymphatic element, and will in no way interfere with any of the surrounding and adjacent cells or glands. From the standpoint of infection, the shrinkage of the tonsil and the lymph tissue of the lateral and posterior walls of the nasopharynx by the X-ray will relieve the distension of the crypts throughout the entire mucous membrane and thus promote drainage. This is impossible by any other method. The technique requires 5 in. spirit gap, a current of 5 ma., 3-mm. aluminum filter 1.5 m. skin distance, and three mm. tea exposure to each tonsil. From five to ten treatments are given

at intervals of one week. The treatments are repeated in all cases until members of the hemolytic group or the pneumococcus group, or other pathogenic organisms found present, disappear. A minimum of five treatments is given if no virulent bacteria are discovered.

Thirteen cases of tonsils examined before and after X-ray treatment showed no increase of fibrosis, but some evulsion of the cells of the mucosa with apparent widening of the crypts. There was no reduction in the size of the lymph follicles, but in a few cases there appeared to be thinning out of the number of cells. There was a apparent reduction in the amount of lymphoid tissue.

In observing the cases over a period of six months the author noted a marked reduction in size in the greatly hypertrophied tonsils following X-ray therapy. The tonsils removed after a course of roentgen-ray treatment showed marked atrophy behind the pillars rather than a decrease in size. The organs were more densely adherent after treatment.

In the author's opinion, X-ray therapy is valuable adjunct to present day methods of treating diseases of the throat, but its use is limited as the tonsil is apt to become infected after it has been rendered sterile by means of the X-ray. The operation of tonsillectomy remains the method of choice when it can be used safely. In the cases of neurotic persons poor operators and persons who refuse any operative procedure, roentgen ray therapy is of decided value.

JAMES C. B. SWELL, M.D.

Boyd E. Observations on Some Throat Conditions in Children. *Med Press* 923, civ 56

The author discusses (1) the influence of the contraction of the palatoglossus muscle in the formation of the pendulous and buried types of tonsils (2) smothering (3) the influence of defective nasal breathing in the production of deformities of the bones of the face, and (4) affections of the tonsils in infancy.

Boyd believes that the shape of the tonsil depends on the strength of the contraction of the palatoglossus muscle. The stronger the muscle the more protruding or buried the tonsil. Tonsils of the pendulous type are more easily removed with the patient gagging but the removal of the buried type demands relaxation.

Smothering is explained by the assumption that the tongue is relaxed and, with the epiglottis falling backward, partially shuts off the airway. When the negative pressure in the thorax is sufficient to draw the air through the narrowed opening, the air is set in vibration.

The defective growth of the bones of the face is more of a biological problem than the result of nasal obstruction. Factors of importance are the condition of the general health and nutrition in early life and the proper development of both the primary and the secondary teeth.

In the author's opinion acute and chronic conditions of the tonsils may occur in infancy and the tonsils should be removed, when diseased, irrespective of the age of the child. The physician in charge should always be consulted. O M Rort MD

Babcock, J W. Observation on the Results of Roentgen Therapy in Chronic Tonsillitis. *J Am M Ass* 9 3, 1917 300

Babcock reports his observations on the results of roentgen therapy in nine cases of chronic tonsillitis to show the futility of depending upon this method in dealing with chronic infected tonsils. He found that roentgen therapy as now administered may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx, but that the residue may be acutely inflamed and much increased in size during the inflammation. Moreover it has been demonstrated that the small fibrous tonsil is equally apt to serve as a focus of infection with remote symptoms.

The findings in excised tonsils indicate that they are not in de-free of pathogenic bacteria. There is no evident increase in connective tissue, diminution of lymphoid tissue, lack of activity of the germinal centers, or widening of the crypts. Neither the demands nor the hypertrophic lymphoid nodules on the posterior wall of the pharynx disappear or change in any appreciable way and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms, involving the heart and joints, have not been relieved in these cases by roentgen therapy, but in several of them has improved following an operation performed some time after the roentgen treatment.

In conclusion the author states that until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by a less unpleasant process, reliance must be placed on surgery. O M Rort MD

Klein, C F. Tonsillitis and Its Complications. *Am J S* 15 923 1917.

The author stresses the importance of careful pre-operative examination of the patient in order to discover conditions such as unrecognized, might give rise to severe or even fatal complications following or during the removal of the tonsils. Several case reports are given to illustrate this point. The following complications are mentioned: hemorrhage, the lodging of a food bolus in the pharynx, status epilepticus, feeble heart, coincident suppurative appendicitis, lung abscess, tuberculosis, syphilis, lymphosarcoma of the cervical glands, suppuration of the accessory sinuses and neuritis.

In order to discover the presence of such complications the patient should be taken to the hospital the day previous to the operation and complete physical and laboratory examinations should be made in addition to careful recording of the history. O M Rort MD

Hill, F A. Cysts of the Bursa Pharyngea. *Laryngoscope* 9 3, 1917 37

The bursa pharyngea is a small median pouch or recess connected with the pharyngeal tonsil on the upper posterior wall of the nasopharynx. Its nature is still indefinite but has been variously stated to be (1) the remains of Rathke's pouch, (2) a cyst developed in connection with the pharyngeal tonsil, (3) an independent outgrowth of the mucous membrane. The first of these is ruled out by Frazer's work demonstrating that Rathke's pouch is along the back of the nasal septum, a situation entirely too far forward for the development of a cyst in this region.

Cysts of the pharyngeal bursa are first observed in the cadaver by Luschka in 1863. Tornwaldt, in 1885 attempted to show definite relation between these cysts and nasopharyngeal cancer, so-called Tornwaldt's disease. These cysts rarely become large enough for clinical recognition. They vary in size from a few millimeters to about 1 cm in diameter and may occur at any age. In the nasopharyngeal mirror they appear as globular hemispherical bluish gray or slightly yellowish masses having broad attachments to the mucosa of the upper posterior wall and the slit of the nasopharynx. They are either unilocular or multilocular but a thin limiting membrane are slightly fluctuant and contain thick viscid mucus or purulent. The posterior wall is formed by the mucous membrane over the bony process of the occipital bone which is exposed according to the cyst of the cyst wall. As a rule such tumors do not cause symptoms unless there is an associated inflammatory condition or they are large enough to cause obstruction. It should not be difficult to make diagnosis as the location and appearance of the cyst are characteristic. Clinically they are significant as a rule only from a diagnostic standpoint, many of the cases having been found accidentally during the course of routine nasopharyngeal or detailed postmortem examinations. Two cases are reported, one that of a man aged 37 years, the other that of a man of 5. In both instances the cyst was discovered during the course of a routine nasopharyngeal examination, no symptoms referable to the tumor being present.

Berry G. War Surgery of the Larynx, with Special Reference to the Work at Cape May. *Laryngoscope* 9 3 1917 85

The principal symptoms of an injury of the larynx are aphonia, hemoptysis, dyspnea, external hemorrhage, dysphagia, emphysema, difficulty in moving the neck, and injury of the nearby nerves. The more frequent complications are bronchitis, pneumonia, septicemia, mediastinitis, and gas infection.

The treatment depends upon the nature of the lesion. Palliative treatment consists of rest and the use of sedatives, steam inhalations, and allied medication. Many cases are cured by these procedures.

The first essential is to prevent choking. If palhatic measures do not serve, a tracheotomy becomes imperative. If the case is under close observation in hospital, tracheotomy may be delayed, but if the patient must be transported it should be performed at once. The majority of surgeons prefer to perform a high tracheotomy first and a low one later if the cannula remains in for a long period of time.

Extralaryngeal bleeding is controlled by the usual surgical procedures. Intralaryngeal bleeding usually stops spontaneously.

The emphysema takes care of itself after free breathing has been restored and the wound has been opened up. Dysphagia due to traumatic swelling disappears as the edema goes down. If the œsophagus has been cut, the edges should be sutured and the patient fed for a while through a tube or by rectum.

The indirect laryngeal picture should be studied as early as possible in order that tears of the mucous membrane, edematous stenoses, and early paralysis may be determined and recorded against later changes.

Of ten cases treated at Cape May, high tracheotomy was done in six, and in three of the latter low tracheotomy as done later. In two the tube was removed after three weeks, and one after one year. In another it will be removed soon but in the fifth must be left in place for some time longer. The sixth patient has not been heard from for over a year.

In four cases a chronic laryngeal stenosis developed and required protracted operative treatment.

The vocal results may be classified as follows: whisper once, four weeks; hoarse once, five strong hoarse once, three. There were no fatalities in the series.

In the author's opinion infection plays a very important part in the cute cases, but in chronic stenoses the presence of the tracheotomy tube is of greater importance. When a high tracheotomy is done, a space through which no air passes is established between the tube below and the cords above. The organism tends to fill up such dead space, the resulting stenosis being not much a scar contraction as new tissue formation built in from the cartilages all round. In order to defeat this tissue infiltration the caliber of the breathing tube should be diminished so that more air can pass around the tube to exert positive pressure.

JAMES C. BRASWELL, M.D.

*James A. Subcutaneous Avulsion with Oblique Torsion of the Larynx After Burnal (Sebutaneurismus mit schräger Torsion des Kehlkopfes nach Verwundung). Zeitschr. f. Laryngol. Rhinol. 22, 7.*

In 1906 a soldier 24 years old was buried in such way that he was covered by earth up to his mouth hole in the standing position. His head was turned and bent to the left, his neck was squeezed and separation was possible only with the greatest

difficulty. The author saw the patient for the first time four years after the injury. Respiration was then difficult only on rapid walking, on bending down, and when the head was turned. Externally absence of the muscular pad on the right side of the neck and of connection in the center between the hyoid bone and the edge of the thyroid cartilage was found. Over the sternum was a protrusion as large as an apple, which proved to be the larynx. On laryngoscopic examination the entire left half of the larynx appeared shortened but the right half was very clearly visible. The author explains this condition as follows.

During the burial the right side of the neck was under considerable pressure from the masses of earth lying upon it. The right sternocleidomastoid muscle was stretched and ruptured with the formation of a hematoma. The larynx stretching of the hypothyroid region and torsion and squeezing were produced. With developing tetanus of the larynx,

an attempt is made to overcome the obstruction to expiration in reflex manner by drawing the larynx upward and downward (Gerhardt's symptom). The result of this attempt in this case was the violation of the thyrohyoid muscles and the upper cords of the thyroid cartilage, and the sinking of the larynx in its position of torsion downward to the sternum. The hindrance to swallowing was shown roentgenologically to have been caused by the pressure of the displaced larynx on the œsophagus. H. FISCH (7).

## MOUTH

Darling, B. C. Can the Medical and Dental Professions Agree on Any Standardized Treatment of the Focus of Infection? *J. Radiol.* 9, 3, 39.

The material presented in this paper has been compiled from about fifty-five replies to questionnaires sent out to 200 dentists in various parts of the country. These men are all well known, the professions and their replies may be considered a representative of what dentists are doing today. The problems presented by oral foci of infection in the form of periodontal and pyorrheal conditions.

The following questions were asked:

What is your present opinion as to extraction in the case of a tooth that shows definite periodontal or pyorrheal destruction?

b. What is your present opinion as to extraction in the case of a tooth that shows definite periodontal rarefaction or chronic abscess?

cc. If you believe in root canal treatment of these teeth what method do you recommend?

d. What X-ray appearance will differentiate those favorable for root canal therapy from those that be extracted?

ee. What important clinical symptom or guide other than the X-ray appearance will enable you to tell which teeth will go on to repair and bone restoration and which are a possible source of infection?

In the author's opinion acute and chronic conditions of the tonsils may occur in infancy and the tonsils should be removed, when diagnosed irrespective of the age of the child. The physician in charge should always be consulted. O. M. Rorr M.D.

Babcock, J. W. Observation on the Results of Roentgen Therapy in Chronic Tonsillitis. *J. Am. M. A.* 9:3, 1919, 300.

Babcock reports his observations on the result of roentgen therapy in nine cases of chronic tonsillitis. It shows the fallacy of depending upon this method in dealing with chronic infected tonsils. If found that roentgen therapy as now advocated may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx but that the residue may be acutely inflamed and much increased in size during the inflammation. Moreover it has been demonstrated that the small fibrous tonsil is equally apt to serve as focus of infection with remote symptoms.

The findings in excised tonsils indicate that they are not made free of pathogenic bacteria; that there is no evident increase in connective tissue; diminution of lymphoid tissue; lack of activity of the germinal centers, or widening of the crypts. Neither the adenoids nor the hypertrophic lymphoid nodules on the posterior wall of the pharynx disappear or change in any appreciable way and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms involving the heart and joints have not been relieved in these cases by roentgen therapy but in several of them have improved following operation performed some time after the roentgen treatment.

In conclusion the author states that until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by less unpleasant process, reliance must be placed on surgery. O. M. Rorr M.D.

Kuhn, C. F. Tonsillectomy and Its Complications. *Am. J. Surg.* 9:3, 1919, 302.

The author stresses the importance of careful pre-operative examination of the patient in order to discover conditions which, unrecognized, might give rise to severe or even fatal complications following or during the removal of the tonsils. Several case reports are given to illustrate this point. The following complications are mentioned: hemorrhage, the lodging of food bolus in the pharynx, status lymphaticus, feeble heart, coincident suppurative appendicitis, lung abscess, tuberculosis, epipharyngeal abscess of the cervical glands, separation of the accessory sinuses, and neurasthenia.

In order to discover the presence of such complications the patient should be taken to the hospital the day previous to the operation and complete physical and laboratory examinations should be made in addition to careful recording of the history. O. M. Rorr M.D.

Figl, F. A. Cysts of the Bursa Pharyngea. *Laryng. u. Rhin.* 9:12, 1919, 37.

The bursa pharyngea is a small median pouch or recess connected with the pharyngeal tonsil on the upper posterior wall of the nasopharynx. Its nature is still indefinite but has been erroneously stated to be (1) the remains of Rathke's pouch, (2) a cyst developed in connection with the pharyngeal tonsil, (3) an independent outgrowth of the mucous membrane. The first of these is ruled out by Frazer's work demonstrating that Rathke's point is along the back of the nasal septum, a situation entirely too far forward for the development of a cyst in this region.

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Berry, G. War Surgery of the Larynx, with Special Reference to the Work of Cape May Laryngoscope. 9:3, 1919, 38.

The principal symptoms of war injuries of the larynx are pharynx, hemorrhage, dyspnea, external hemorrhage, dysphagia, emphysema, difficulty in moving the neck, and injury of the nearby nerves. The more frequent complications are bronchitis, pneumonia, septicemia, mediastinitis, and gas infection.

The treatment depends upon the nature of the lesion. Palliative treatment consists of rest and the use of sedatives, steam inhalations, and other medication. Many cases are cured by these procedures.

# BIBLIOGRAPHY of CURRENT LITERATURE

## GENERAL SURGERY—SURGICAL TECHNIQUE

Note.—The bold face figures in brackets at the right of reference indicate the page of this work on which abstract of the article referred to may be found

### Operative Surgery and Technique

- Skin grafting by exact pattern B DOWLING *Ann Surg* 1923 **xxvii**, 223  
An operation for ingrowing toe nails G C NEY *J Am M Ass* 1923 **lxix**, 574  
A protest against the unrestricted use of the sharp tenaculum E RYAN *Zentralbl f Chir* 1923, **xix**, 87  
Why women carbonate S HARNBERGER *Internist J Surg* 1923, **xxvii**, 67  
Treatment of suppurative diseases without tampon and the results of this method N I TOSHIKAWA *Verhandl d Kass Chir Kongr Petrograd*, 92  
Widow drainage A SCHUBERT *Zentralbl f Chir* 1923, **ix**, 81  
The factor of obesity in surgical operations W C G KROGER *J Missouri Stat M Ass* 1923, **xx**, 49  
Instruments left in the peritoneal cavity—an analysis of forty-four unpublished cases C WHITE *Brit M J* 1923, **l**, 128  
Hypertonic glucose solutions as prophylactic against septic effects of operation and anesthesia B TRICE *Surg Zentralbl f Chir* 1923, **xix**, 147  
The physiology of wounds E MICHNER *Berl Klin Chir* 1923, **cxviii**, 38  
Postoperative lung sepsis J PERKINS *Rhode Island M J* 1923, **vi**, 7  
Postoperative pulmonary complications C O COOKE and W PIERCE *Rhode Island M J* 1923, **vi**, 8

### Aseptic and Antiseptic Surgery

- Chloramine in the surgical treatment of wounds W BOCK *Med Klin* 1923, **xviii**, 435  
The influence of antiseptics on the cells Z W OZOL *Verhandl d Kass Chir Kongr Petrograd* 9  
The surgical importance of sodium aluminosulfate and potassium H G ROWELL *Surg Gynec & Obst* 1923, **xxvii**, 719  
The use of pyocyanin aureum and ichthyol in minor surgery CANOV *Ztschr f Bahrn Hebammenzentr*, 1922 **xix**, 13

### Anesthesia

- A historical review of the use of anesthetics in surgery J E STRAUSS *Nowy Chir Arch* 1923, **ii**, 70

What is the best method of inducing anesthesia of those in need of it MARIN *Brussels med* 1923, **ix**, 356

A safe method of anesthetizing children with ethyl chloride J F LUNAR *J Am M Ass* 1923, **lxix**, 3

Dangers of the chloride unit used in children SERRAT *Deutsche med Wochenschr* 1923, **xix**, 55

The physiological effects of nitrous oxide N C T OR *California St J M* 1923, **xix**, 70

Inhalation anesthesia in the cardiac region M V CARRELL *Crée med Juss* 1923, **xix**, 369

Local anesthesia G SABAT *Potolun Rome* 1923, **ix**, 343

A serious accident in the induction of local anesthesia by cocaine adrenaline J BOMERAT *Lacoste and G*

ACQUITT *J de med de Bordeaux* 1923, **xxv**, 84

Clinical investigations on the behavior of the blood pressure and the pulse during and after novocaine-adrenaline anesthesia O WILHELM *Deutsche Ztschr f Chir* 1923, **ix**, 50

Further observations on injurious effects of novocaine A DRECHT *Deutsche med Wochenschr* 1923, **xix**, 80

Spinal anesthesia in general surgery C R FOR *Crée med Juss* 1923, **xix**, 383

A case of isolated paralysis of the abdominal wall following spinal anesthesia induced with storaine A W

LAUFMANN *Psychiat Nervenl experiment Psychol* 1923, **ix**, 400

Limbar anesthesia SEITZ *Archiv f Klin med Wochenschr* 1923, **xix**, 625

Limbar anesthesia M Von B *Stuttgart Folio* 1923

### Surgical Instruments and Apparatus

A few important points on the LaForte and Beck Sherk instruments S COHEN *Laryngoscope* 1923, **xxviii**, 49

Care and preservation of injection syringes and cannulae H FRIEDL *Deutsche med Wochenschr* 1923, **xix**, 4

An intravenous needle with screw cap H W ARTHUR *J Am M Ass* 1923, **lxix**, 399

A modification of the DeChangy vascular ligature needle L ON *Crée Zentralbl f Chir* 1923, **xix**, 504

A double triangle towel shoulder-cap G D CUTLER *J Am M Ass* 1923, **lxix**, 47

A thoracic abdominal clip J J RECHENWALD *N York M J & Med Rec.* 1923, **cxviii**, 409

## SURGERY OF THE HEAD AND NECK

### Head

- Cancer of the scalp on cicatrix in child J CURTLEY and J LACROIX *Bull et mèm Soc anat de Par* 1923, **ix**, 434

Fracture of the skull and its complications M F BEARD *Am J Surg* 1923, **xxviii**, 33

Intracranial abscess following fracture of the skull report of case with review of the literature F C GE *Arch Surg Gynec & Obst.* 1923, **xxviii**, 51

3 Do you believe that where teeth show bone restoration more or less complete in two or three years this indicates that the teeth are no longer a possible source of infection? Why?

4a Is there any working basis in your locality? If so what is it?

4b Does each dentist work it out for himself on the basis of root canal treatment, if possible withholding extraction?

5 How would you define or standardize the dental attitude in this matter so that the dental and medical professions can understand each other?

6 In pyorrhea what amount of alveolar destruction indicates extraction?

7a Is it sounder for the diagnostic survey for the average dentist to consult with a medical or dental roentgenologist or to do all his own X ray work and interpretation?

7b Will the public as well as the professions be benefited by sharing of the responsibility by consultation?

The following is summary of the replies

1a Fifty-six per cent extract 1 per cent treat first 34 per cent save

1b Forty-eight per cent extract 40 per cent treat first, 1 per cent save

2a There is too great divergence of methods for classification

b Seventy six per cent use the X-ray for differential diagnosis 24 per cent do not depend on the X-ray

2c Seventy three per cent use clinical symptoms 27 per cent do not depend on clinical symptoms

3 Thirty-eight per cent believe infection remains after bone restoration 13 per cent are undecided, 40 per cent believe infection is cured.

4a There is no agreed working basis

4b Fifty-four per cent of the dentists work out each case for themselves 13 per cent have a slight tendency to an agreed practice 33 per cent are on certain.

5 The majority believe it is impossible to standardize the dental attitude at the present time

6 There is no definite standard as to what amount of alveolar destruction indicates extraction

7 Forty-two per cent believe the dentist should do his own X-ray work 53 per cent favor consultation with roentgenologist.

7b. Twenty four per cent are unwilling to consult with members of the medical profession, 70 per cent are willing to consult S J SSKORA, M D

## Neck

- Secondary cancer in the treatment of infections of the neck G P MILLER *Surg Clin N Am* 923 iii, 33
- Tumor of the neck, carcinoma, primary or secondary (7), removal of tumor with resection of the three carotids and the internal jugular vein J H JORSKY *Surg Clin N Am* 923, iii, 69
- Metastatic carcinoma of cervical lymph nodes with hyperplastic atrophy, with resection of the internal jugular vein P G SKILLMAN *Surg Clin N Am* 923, iii, 101
- An elementary chemical study of the parathyroid glands of cattle A M HANSON *Mil Surg* 923 ii, 80
- Tumor of the parathyroid gland B M KOSOWITZ *Mediz. Spornik. Jekaterinoborsk. Gub. d. v. n. p.* 923, 2, 114 [414]
- Contribution to the study of functional diagnosis of the thyroid gland E C CAVERAS *Prog. de la clin. Madrid*, 1923 xiv, 443
- The basal metabolism of young girls F G BENDER *Rosen M. & S. J.* 923 cxxxvii, 7 [414]
- Diseases of the thyroid gland S O BLACK *South M. & S.* 1923 lxxxv, 16
- Chronic thyroiditis A REIST *Frankfurt Ztschr. f. Path.*, 1923 xlviii, 14
- The significance of reddening of the thyroid and hyperemia of the thyroid region G MARIANOVA and J GUTENBERG *Prog. de la clin. Madrid*, 923, xiv, 3
- Toxic thyroid M P OYENWILLER *J. Missouri State M. Ass.* 1923 xv, 99
- Concerning the pathogenesis of thyrotoxicosis Part II V A J VERT *Endocrinology* 923 vi, 795
- The treatment of thyrotoxicosis T P LLOYD N *Ochs M. & S. J.* 1923, lxxxv, 456

- Some points in the diagnosis and treatment of hyperthyroidism H W RIGGS *Canadian M. Ass. J.* 923, xiii, 66
- Acute yellow trophic associated with hyperthyroidism W J KILMER and G Y RECK *Med. Clin. N. Am.* 923, vi, 445
- The problem of Basedow's disease B BRITTON *Mitt. d. Grenzgeb. d. Med. u. Chir.* 923, xxv, 637
- Hypophysectomy in exophthalmic goiter preliminary report E F HODGIA *Bull. Johns Hopkins Hosp. Balt.* 923 xxxiv, 69 [414]
- The therapeutics of exophthalmic goiter A B SCHWENK *J. Am. Inst. Homoeop.* 923 vi, 716
- The roentgen treatment of Basedow's disease J F FLORENCE *Ugsl. f. Læger* 923 lxxxv, 345, 38
- A case of pernicious anemia in Basedow's disease following roentgen treatment J HAVRY *Ugsl. f. Læger* 923 lxxxv, 643
- The method and technique of operation for goiter H FLORENCE *Benr. klin. Chir.* 923 cxi, 85 [415]
- The thyroid and its therapeutics A L BLACKWOOD *J. Am. Inst. Homoeop.* 923 xv, 7
- Regeneration and transplantation of the thyroid M V HODGIA *Endocrinology* 923 vi, 6
- Thyroidectomy for malignant disease in man of 4 W J HARRIS *Brit. M. J.* 923, 3
- An unusual case of carcinoma of the larynx pedicled carcinoma of the larynx H DUNN *Ztschr. f. Laryngol. Rhinol. etc.* 923, xi, [415]
- The operation of total laryngectomy for the cure of recurrent cancer of the larynx J L M. HART *Ann. Otol. Rhinol. & Laryngol.* 923, xxi
- What happens to the normal epiglottis in total extirpation of the larynx A. KURTZ *Wien. M. Wochenschr.* 923, lxxvii,

## SURGERY OF THE CHEST

## Chest Wall and Breast

- Therapeutics I JENNEY *Ztschr. f. Tuberk.* 923, 41
- Fracture of rib with rupture of the intercostal artery lumbago, resection, cure J HARRINGTON *Prespec. Méd. Par.* 1923, xxxi, 95
- Two typical lesions of the ribs S LIPP *Watschenberg. Dtsch. Arch.* 1923, 140 [416]
- A fatal case of empyema due to anaerobic infection J P LARKE *Edinburgh M. J.* 923, xxx, 60
- Chronic empyema C EODGES *Ann. Surg.* 923, lxxxi, 141 [416]
- Differences of some technical details in the treatment of chronic empyema GÓMEZ *Rev. esp. de ciruj.* 923, 94
- The surgical consideration of empyema J W PRICE *Kentucky M. J.* 923, xii, 60
- Surgical treatment of empyema R F TOSLIVAN *Pacific Coast J. Homoeop.* 923 lxxxv, 5
- Tumors of the breast W D HARRISON and H L DICKMAN *J. Am. M. Ass.* 923 lxxx, 445
- Tumor formation in axillary breast tissue SONNTHAL *Benr. klin. Chir.* 923, cxxvii, 637
- A clinical consideration of tumors of the breast J F ELLIOTT *Am. J. Obst. & Gynec.* 923, 6
- A case of cystadenoma of the breast J P TOL *Arch. Nérol. Soc. anat. de Par.* 923, xxi, 53
- Cancer of the breast its treatment by X rays and electricity F HERNANDEZ JORDAN *Practitioner* 923, cx,

- Carcinoma of the breast its combined treatment surgery X rays and radium W J CAMDEN *J. Michigan M. Soc.* 923, xxi, 83
- A study of the cases of carcinoma mammae operated upon by myself and the end results obtained in them J F. SAGGS *Surg. Gynec. & Obst.* 923 lxxxv, 35 [417]
- My breast diseases of the breast with special reference to the supracervical stenosis of the operation C A MORRO *Brit. M. J.* 923, 78 [417]
- The abdominal flap in extensive amputations of the breast R. SOUPE *Prespec. Méd. Par.* 923, xxxi, 77
- The retention of sensation of the skin after section of the intercostal brachial plexus in amputation of the breast L. TR. M. Benr. *klin. Chir.* 923, cxxvii, 64
- Local recurrence following extirpation of carcinoma of the breast I. CHART *Gy. Obs. Gynec.* 923, 544 [418]
- Recurrence of carcinoma of the breast, inch developed after clinical cure lasting five years or longer following treatment with the roentgen ray A. HILVER *klin. Wochenschr.* 923, 87 [418]

## Trachea and Lungs

- The treatment of pleural rachs especially cradates associated with artificial pneumothorax remarks on the absorption processes in tuberculous A. LLOYD *Med. rev.* 923 lxxxv, 269
- Epidemic streptococcal pleurisy A. WOODBRIDGE *Arch. f. klin. exp. Med.* 923, 65
- A case of subpleural typhus in child C F HATERS *Lancet* 923, cxcv, 83



- Cranial and intracranial lesions. C. K. P. HIGGS. *Canadian M. Ass. J.* 923, xxi, 26.
- Fracture of the skull base with superficial hemorrhage on the opposite side: report of an interesting autopsy. S. GRAVES. *Kentucky M. J.* 923, xii, 634. [418]
- A complicated case of coarctation. S. LINQVIST. *Zentralbl. f. Chir.* 923, xlix, 744.
- Cerebral polyplasia due to trauma. S. S. PRACHINSKY. *Arch. f. klin. exp. Med.* 923, 1.
- Osteitis of the temporal bone with osteomyelitis. H. L. WEALE. *Brit. M. J.* 1923, 3, 33.
- Death wound of the brain. J. KIRBY. *Oregon Med.* 923, lxxv, 444.
- Cortical anasthesia. H. A. RILEY. *Med. Clin. N. Am.* 923, vi, 765.
- The use of air in the diagnosis of intracranial lesions: an illustrative case. J. C. GEA. *Surg. Clin. N. Am.* 923, xi, 290.
- Otic meningitis. H. BOYD-SMITH. *J. Indiana State M. Ass.* 923, xvi, 37.
- The differential diagnosis of meningitis. C. F. NEE. *J. Indiana State M. Ass.* 923, xvi, 31.
- A peculiar form of meningitis following intraspinal therapy administered during the course of unrecognized bronchopneumonia, with report of the pathological findings. J. A. P. MILLER. *Bull. Buffalo Gen. Hosp., Buffalo.* 923, 4, 8.
- The treatment of meningitis. M. F. POSTER. *J. Indiana State M. Ass.* 923, xvi, 38.
- The regeneration of the meninges. W. A. SAAR and S. C. HARTER. *Ann. Surg.* 923, lxxv, 89. [410]
- Cerebral and cerebellar hemorrhages in apparently healthy adolescents and children. C. O. H. WYNN. *Practitioner* 923, cix, 45. [410]
- Acute hemorrhagic encephalitis: report of a case following scarlet fever. J. A. TOOMER, L. H. DIXON, and G. McCONVILLE. *Am. J. Dis. Child.* 923, xxv, 96.
- Psychotic aspects of epidemic encephalitis. R. L. RICHARDS. *California State J. M.* 923, xxi, 56.
- The treatment of the meningial form of acute encephalitis with anti-meningococcus serum. W. W. HERRICK. *J. Am. M. Ass.* 923, lxxx, 58.
- Encephalitis lethargica: an epidemic outbreak in small school. L. L. FRYE. *Lancet*, cccv, 379.
- The terminology and pathological anatomy of brain cysts. W. MORGENTHAU. *Wissenschaft. Ztschr.* 923, 14, 337. [410]
- A roentgenographic study of the sella turcica in normal children. M. B. GORDON and A. L. BELL. *Endocrinol.* 923, vii, 5.
- The function of the hypophysis cerebri. P. BAILEY. *Endocr. d. Physiol.* 923, xi, 6.
- Some points in regard to hypopituitarism and its treatment, with some illustrated cases. A. A. BARKER. *South. M. & S.* 923, lxxxv, 9.
- Some of the surgical problems in the management of pituitary disorders. C. H. FRANKER. *Surg. Clin. N. Am.* 923, xi, 33.
- Cases of cerebral aneurysm simulating dementia paralytica. C. ROSENBERG. *J. Am. M. Ass.* 923, lxxx, 470.
- Successful removal of a brain tumor: the treatment post operative complications. W. PRATT. *Internat. J. Surg.* 923, xxxvii, 40.
- Increased cerebral pressure with fat embolism. S. LICHNER. *Acta chirurg. Scand.* 923, lv, 37. [411]
- Intra-ocular manifestations in the various brain conditions associated with brain pressure, and the modern operations by which these manifestations are brought about. J. A. BLACK. *Minnesota M. J.* 923, xxi, 40.
- Intracranial pressure and cerebrospinal fluid secretion after radical operation for brain tumor. H. SCHOTTE. *Med. Klin.* 923, xiv, 4.
- Cerebral hypertension in infancy: clinical considerations. A. SUTHER. *Scandinav. med.* 923, xxx, 125.
- Ventriculography and intraventricular photography in internal hydrocephalus. T. F. YARD and F. C. GRAY. *J. Am. M. Ass.* 923, lxxx, 47. [411]
- Unilateral exophthalmos: clinical report of five cases. C. H. FRANKER and K. M. HORTON. *Surg. Clin. N. Am.* 1923, xi, 28.
- Transcervical drainage. F. PAGES and L. LLOYD. *Rev. chir. d. France* 923.
- Lesions of the paratracheal area. L. F. D. VAN. *J. Am. M. Ass.* 923, lxxx, 350.
- On the question of rhinoplasty. N. N. PETROFF. *West. Ch. Ch. J. (program abstracts)*, 923, 1, 77.
- Rotation of the cheek. J. F. S. EMER. *Moench. med. Wochenschr.* 923, lxxx, 780. [412]
- Double lip. G. M. DORRANCE. *Ann. Surg.* 923, lxxvi, 376.
- Harsh and cleft palate. M. A. FINKELSTEIN. *Internat. J. Orthodont. Oral Surg. & Radiography* 923, vi, 36.
- Carcinoma of the cheeks and lips: general principles involved in operations and summary of the results obtained at the Presbyterian, Memorial, and Roosevelt Hospitals, New York. G. E. BARBER. *Surg. Gynec. & Obst.* 923, xxxvi, 80. [412]
- The diagnosis and treatment of primary isolated actinomycosis of the parotid gland. K. BRUN. *Zschr. f. Hals-Nasen-Ohrenheilk.* 923, 270.
- The origin and distribution of epitheliomas of the salivary and mucous glands. E. KROMBEINER. *Deut. z. path. Anat.* 1893, lxx, 456.
- A case of mixed tumor of the parotid gland with metastases to bones. M. BRUN. *Zentralbl. f. Chir.* 1923, xix, 288.
- Cancer of the lip: its treatment by radium and surgery combined. C. H. WALL. *J. Med. Ass. Georgia*, 1923, xii, 67.
- Carcinoma of the tongue: general principles involved in operations and summary of results obtained at the May Clinic. E. S. JONES and G. B. NEW. *Surg. Gynec. & Obst.* 923, xxxvi, 163. [413]
- A confusing inflammatory process due to the implantation of radium emanation tubes in the tongue. R. E. FICKER. *Therap. Gaz.* 923, xxxix, 90.
- The correction of cleft palate. W. A. BRY. *South. M. J.* 923, xvi, 7.
- Observations and experiences in the treatment of fractures of the jaw: especially the treatment of gunshot injuries of the jaw on the battlefield. A. KROCHEN. *Berlin*, 19.
- Observation on fifteen fractures of the mandible. J. L. BROWN. *U. S. N. val. M. Bull.* 923, xxvi, 245.
- Orthopedic treatment of jaw injuries in ordinary hospital practice. A. L. LINDBERG. *Verhandl. d. Ross. Chir. Kong. Petrograd*, 9.
- Carcinoma of the jaws: tongue, cheek, and lips: general principles involved in operations and summary of the results obtained at the Cleveland Clinic. G. W. CHASE. *Surg. Gynec. & Obst.* 923, xxxvi, 163. [414]
- A procedure for cases of retraction of the mandible. D. A. KIRBY. *Verhandl. d. Ross. Chir. Kong. Petrograd*, 9.
- A subcutaneous hematocyst evacuated through a fistulous duct. M. SUTHER. *Rev. chir. d. France* 923, 23.
- A subcutaneous salivary calculus impacted at the gland orifice of the duct: chronic sialoadenitis: ablation of the salivary gland. P. G. RUTLER. *Surg. Clin. N. Am.* 1923, xi, 93.

- A congenital infantile inguinal hernia. F T THOM. Surg Clin N Am. 9 3, iii, 77.
- Inguinal hernia in the male. S ERM. Ann Surg. 1911, lxxv.
- Irreducible right inguinal hernia, appendix and cecum. J B DRAVER. Surg Clin N Am. 9 3.
- Operation on strangulated inguinal hernia in the presence of an overlying suppurating bubo and severe inflammation of the surrounding skin and subcutaneous tissue with recovery. T T THOMAS. Surg Clin N Am. 9 3, ii, 67.
- Lumbar hernia through Grynfeltt's and Lessault's. I S RAYNER. Surg Clin N Am. 9 3, iii, 20.
- The plastic use of the uterus in hernia operations. A MAYER. Zentralbl f Gynec. 9 xvi, 693.
- Hernia into the omental bursa. W NOORDENBOS. Geneesk Bl. 922, 1910.
- The pathogenesis of torsion of the omentum. G WOLFF. Beitr Klin Chir. 912, cxxvii, 98. [421]
- Primary tuberculous peritonitis. E GRAMMET. Rev méd de la Suisse rom. 912, xli, 658.
- Lat peritonitis following epiploitis after abdominal injury. W STROHM. Med Klin. 92 xviii, 379.
- The intravenous drop-injection of normal salt solution and adrenalin in the treatment of collapse due to peritonitis and following operation. O WERNIKOFF and F C RICHARDSON. Beitr z Klin Chir. 91 cxxvii, 29.
- Peritonitis in the treatment of peritonitis. D K BACON. Minnesota Med. 9 3, vi, 94. [422]
- The bactericidal and the inhibitory power of ether combination: I the study of the ether treatment of peritonitis. C W JONAS. Zentralbl f Bakteriol. 912, 911. [422]
- The Ochsner treatment in peritonitis. J H JONES and D B PRATT. Ann Surg. 912, lxxvii, 94. [422]
- The principles of surgical treatment of infection of the peritoneum. F FRANK. Bristol M Chir J. 912, xi, 20.
- Surgical treatment of peritonitis. R REICHEL. Beitr Klin Chir. 9 2, cxxvii, 207.
- ### Gastro-Intestinal Tract
- Some recent advances in the physiology of the alimentary canal. A J CARLSON. Minnesota Med. 9 3, vi, 7.
- Studies of the mechanism of movement of the mucous membrane of the digestive tract. G FORRESTER. Am J Roentgenol. 912, 2, 87.
- Experimental disturbances of innervation in the stomach and intestine. W KORYTECKY. Ztschr f d ges exp Med. 912, cxxvii, 324.
- The roentgen diagnosis of gastric and intestinal diseases. Ed. Berlin Urban & Schwarzenberg. 9.
- Modern view on the physiopathology of the stomach. M AUCOUT. Policlin Rome. 9 3, xxi, sec. chur. 43.
- Functional gastric tests. A H AARON, H C SCHROEDER, and J C BICK. N York Stat J M. 9 5, xvii, 69.
- Nervous mechanism of functional disorders of digestion, with special reference to hypertonic and hypotonic dyspepsia and nervous colitis. O B BLACKBURN. Med J Australia. 9 3, 4, 45.
- The pathology of the stomach. W H SCHULTZE. Erbe d allg Path. path Anat et. 9, xv, 485.
- Is the stomach focus of infection? N KORYTECKY. Med Press. 912, cxy, 54.
- A simplified method to lessen the danger of gastroscopy. W STROHM. Zentralbl f Chir. 9 3, 57.
- An inquiry into the pyloric stenosis of infants. L O PARSOVA and S G BARLING. Lancet. 9 3, cxy, 90.
- Pyloric spasm infant and treatment. B HERR. Deutsche Ztschr f Chir. 9 cxxvii, 356.
- Report of a case of congenital hypertrophic pyloric stenosis. W R BROADBENT. J Arkansas M Soc. 9 3, ii, 7.
- Atropin in the treatment of congenital pyloric stenosis. M H BASS. Med Clin N Am. 9, vi, 579.
- The various modifications of Bier's operation for gastropyloric stenosis. D MALCHENKO. Zentralbl f Chir. 9 3, 55.
- Experiences in the surgical treatment of gastropyloric stenosis. Bent. Klin Chir. 9, cxxvii, 3. [423]
- T cases of aphthous ulcer of the stomach cured by mesalverin. MAMA. Pharmaz. and Pharmaz. Cl. Jul med. 9, iii, 7.
- Unlocated lymphogranuloma tons and gastric ulcer. M G OLARICH. Crón med. 9, 3, 359.
- Gastric ulcer hemorrhage treated by repeated transfusions posterior (cubic) gastroenterostomy. E P RICHARDSON. Surg Clin N Am. 9, 203.
- Some problems of gastric and duodenal ulcer. B MEYER. B. I. M. J. 9, 3. [423]
- Toxic manifestations following the alkaline treatment of peptic ulcer. J L H. 1917 and A B RIVERS. Arch. Int. Med. 9 3, xvi, 7. [424]
- Treatment of gastroduodenal ulcer. S MOSQUERA. Rev. méd. d. Uruguay. 9 3, xvi, 57.
- The urgency of operation in gastric and duodenal ulcer. G F PATRICK. J. Westch. Chir. postgrad. 9, 63.
- The choice of operation in chronic peptic ulcer. R A BARR. Am J Surg. 9 3, xvi, 5.
- The present status of the surgical treatment of round ulcer of the stomach and duodenum. K BORNHART. Gyn. 9, 4, 466, 474.
- The immediate results of gastro-enterostomy for round ulcer of the stomach. A DUBANOFF. Writschboos. Dtsch. 9, xvi, 3.
- Carcinoma laesio plastica. FAYOT and MARCHAL. Bull. et mémo. Soc. anat. de Par. 9, xxi, 479.
- The roentgen diagnosis of benign gastric tumors. 7. WILHELM. Wien klin. Wochenschr. 9 2, cxxv, 9.
- The X ray diagnosis of benign tumors of the stomach. H LOMTAY. Fortsch. d. Geb. d. Roentgenstrahlen. 9, xxi, 23.
- Gastric polypus. J P M. OLLAUGH. J. Radiol. 9 3, iv, 6.
- Fibrosis of the stomach. J R COOPER. J. Am. M. Assn. 9 3, lxxv, 549.
- The diagnosis of beginning carcinoma of the cardia by transillumination in the Trendelenburg position. roentgenology of the cardia in general. J PALLUY. Fortsch. d. Geb. d. Roentgenstrahlen. 9, xxi, 35.
- Carcinoma of the stomach. report of cure and examination eighteen years after operation. J D DUBOIS. J. Am. M. Assn. 9 3, lxxv, 55.
- Cancer of the stomach. C W ROBERTS. J. Med. Assn. Georgia. 9 3, xxi, 69.
- A case of abnormally large leucomyosarcoma of the stomach. LAUTNER. Verhandl. d. Gesellschaft f. Chir. Moscov. 9.
- Cases illustrating the surgery of the stomach. A P C. ARNOLD. Surg. Clin. N. Am. 9 3, iii, 43.
- A new technique for posterior gastro-enterostomy. R R VILLEGAS. Surg. Gynec. & Obst. 9 3, cxxvi, 373.
- Postoperative hemorrhage following gastro-enterostomy. transduodenal gastroenterostomy. L P RICHARDSON. Surg. Clin. N. Am. 9 3, 12, 3.
- The effect of gastro enterostomy on gastric function interpreted by the fractional test meal. F I G. Brit. J. Surg. 9 3, 403. [425]
- Roentgenological investigations on the functional behavior of the stomach in the various types of posterior





- A differential sign in abdominal rigidity. C. F. VALE  
J Am M Ass, 10 p, 1933, 5
- The diagnosis of obscure chronic abdominal conditions  
J L. RAYMOND Am J M Sc, 1933, 117, 20 [434]
- Pericentostomal X-ray diagnosis H D. MITCHELL  
J Am Med Assoc 1933, 9 p, 27, 705
- Segmental localization of pain through paravertebral  
novocaine injections as differential diagnostic method in  
acute abdominal disease A. LARSEN Alencen med  
Wchnscr 9 p, 1933, 14, 1
- The pathognomonic characteristics of the three types  
of pain in abdominal disease G. J. WARTMAN Am J  
Chir Med 9 p, 1933, 1
- (Myomata in surgical diseases of the abdominal organs  
S. N. LESOWSKA J Westm Chir J postea oblati  
9 p, 1
- Pericentostomal X-ray as aid in the diagnosis of sub-  
diaphragmatic conditions. L. R. BURR. J Am M Ass,  
1933, 117, 404 [435]
- The technique of exploratory puncture in subphrenic  
abscess on the right side C. HENCKE Mitt d Grenzgeb  
d Med Chir 9 p, 1933, 595

- Surgery of the upper abdomen under local anesthesia.  
R. L. FARR Illinois M J, 1933, 20, 30
- Retroperitoneal cysts A. CALCI Arch ital de chir,  
1933, 4, 481 [436]
- A case of retroperitoneal fibrosis arising from the su-  
perior common ligament W. H. OGDEN Lancet, 1933,  
1, 25
- Malignant tumors of the abdomen A. W. COLLINS  
N York M J & Med Rec, 9 p, 1933, 85 [437]
- Two unusual cases of abdominal cancer J B. DAVEN  
Med J Australia, 1933, 1, 33
- Syphilis of the abdominal and thoracic viscera H. C.  
JACOBSEN Acta med Scand 1933, 1, 19, 19
- Surgical diseases of the abdomen caused by animal  
parasites H. KERN. Svensk svensk Abhandl. d  
Lab d Verdrungs- Stoffwechs Krankh 1933, 1, 1
- Echinococcus disease of the abdominal cavity U  
WILKINSON Verhändl d Gesellschaft f Chir Moskau  
9
- Ether intravascularly for the relief of hiccup G. L.  
GRIGOROV J Am M Ass 1933, 117, 399

## SURGERY OF THE EXTREMITIES

### Conditions of the Bones, Joints, Muscles, Tendons, Etc.

- Contributions to the microscopic findings in bone cysts  
F. J. LAMB Deutsche Zeitschr f Chir 9 p, 1933, 43
- [Retrospect of the tissue of the bone marrow H. HENCKEN  
Verhändl d Rom. path Ges, Moskau 9
- Two independent foci in the same epiphyseal A. I. ARAM  
Arch. brit. de med 1933, 1, 203
- A new method of treatment for chronic infections in-  
volving bone H. W. CROOK Nebraska State M J 9 p,  
1933, 92
- Acute osteomyelitis A. E. MILLER Surg Clin N  
Am, 1933, 1, 11
- Acute infective osteomyelitis D. C. HOLT Ohio State  
M J 1933, 1, 77
- Recurrent suppurative osteomyelitis (multiple) A. E.  
MILLER Surg Clin N Am 1933, 1, 11, 57
- On diagnostic and therapeutic importance of some typi-  
cal transfer bone points R. BARTIA Mitt N York M J  
& Med Rec 1933, 1, 25
- Other's disturbance of growth H. H. BLACKBURN  
Arch. f orthop. Unfall Chir 1933, 1, 203, 206
- The blood picture in osteitis fibrosa A. ROSSO Mitt  
d Grenzgeb d Med Chir 1933, 1, 203, 206
- Experimental investigations concerning mechanically  
induced metaplasia in growing and adult bone, and its  
significance with regard to the pathology of bone partic-  
ularly epiphyseal changes in diseases allied to rickets.  
W. MITCHELL Beitr z klin Chir 1933, 1, 203, 206
- Retarded rachitis, the retarded rachitic organ of all de-  
formities of growth and war osteomalacia A. FRONCK  
Friedr d Chir Orthop 1933, 1, 203, 206
- The treatment of rachitis G. MIAOCHI and J. D. KIRK  
Arch. f orthop. Unfall Chir 1933, 1, 203, 206
- Endocrinology in osteomalacia P. ALARCON Arch  
de med. e puer 9 p, 1933, 1, 203, 206
- Certain factors causing the deposition of lime salts in  
bone. E. A. PARK Dental Cosmos, 1933, 1, 203, 206 [438]
- Bone disease following typhoid fever P. KRATZ  
Fortachr d Geb d Romptmed, 1933, 1, 203, 206
- A case of multiple exostoses in child of 3 years SCHERER  
and ROBERT D'Arny Bull et mèm Soc anat de Par  
1932, 1, 203, 206

- Multiple extra-osseous, one report L. A. ARVOLO  
Kentucky M J 9 p, 1933, 1, 203, 206
- Tumors of the parathyroid gland in cases of multiple  
osteitis fibrosa of the osseous system B. GERNER  
Frankf. Zeitschr f Path 1933, 1, 203, 206
- Bone tumors, sarcoma, periprostal group, sclerosing type,  
osteogenic, methods of diagnosis and treatment J. C.  
BLOOMBERG J. RACH 1933, 1, 203, 206 [439]
- Springs of the large joints of the extremities C. KAPPE  
Schweiz. med Wchnscr 9 p, 1933, 1, 203, 206 [440]
- A case of septic arthritis in an infant A. J. FORD  
Canadian M J 1933, 1, 203, 206
- Effusion in acute infectious arthritis. S. H. BOOTHBY  
N York M J & Med Rec 1933, 1, 203, 206
- Observations on changes in the joints of relapsing fever  
and in its sequelae Paratyphoid N. O. I. ANDERSON Ver  
händl d Kong f innl Med Fretningd, 1933, 1, 203, 206
- The gonorrhea and the joints OGDEN, PROTÉ, and  
JES. France med., Par 1933, 1, 203, 206
- A gonococcal articular lesion due to operative trauma.  
MORRIS and BARNES Bull et mèm Soc anat de Par,  
1933, 1, 203, 206
- The action of the triceps brachii R. CANNON, MEMPHIS  
Arch. f Psychiat Neurol 1933, 1, 203, 206
- The pathogenesis and treatment of substantial rupture  
of the long biceps tendon G. ROSSIGNOL Zeitschr  
f Chir 1933, 1, 203, 206
- Post-traumatic paralysis of the deltoids G. FIVRO  
Rev med d Uruguay 1933, 1, 203, 206
- Osteomyelitis of the clavicle NIELL Bull et mèm  
Soc anat de Par 1933, 1, 203, 206
- The signs of congenital palsy of the shoulder paralys.  
P. DILACROIX Arch f orthop. Unfall Chir 1933, 1, 203, 206
- Round shoulders L. ROSSIGNOL Arch f orthop  
Unfall Chir 1933, 1, 203, 206
- Scapular shoulder and voluntary dislocation of the  
shoulder M. KAPPE Arch f orthop. Unfall Chir,  
1933, 1, 203, 206 [441]
- So-called crepitation of the scapula J. VOTAW  
Klin Wchnscr 1933, 1, 203, 206 [442]
- A case of homeo-vascular peri arthritis as symptom of  
general arthritis P. HANSEN Med Klin 1933, 1, 203, 206



and Arson. Bull et mën Soc anat de Par 1922, xxi, 304.

Forward dislocation of both bones of the forearm: the elbow: review of the recorded cases and the literature, with report of case I. Chén. Surg Gynec & Obst 1922, xxiv, 776.

The treatment of fractures of the forearm with great dislocation treated with pin traction. R. A. Koomans. Surg Gynec & Obst., 1922, xxiv, 701.

Some new types of fractures of the radius. OUBARD and JEA. Rev orthop., 1922, xxx, 137.

Fracture of the radial head, traumatic forearm body free in the joint: extraction cure. J. HENRI. Bull et mën Soc anat de Par 1922, xxi, 470.

Ununited fracture of the radius (left): autogenous bone-graft relay: defective osteogenesis: fracture of graft. P. G. SCHILLER. Surg Clin N Am, 1922, x, 207.

Fracture of the styloid process of the ulna. H. R. SCHNITZ. Deutsche med Wchnsch, 1922, cxv, 8.

Fracture of the trapezium of the right hand. T. MARMON. Bull et mën Soc anat de Par, 1922, xxi, 577.

The treatment of central luxations of the femur. O. WANDERLICH. Kln Wchnsch, 1922, cxv, 1, 443.

A new method of treating irreducible acquired or congenital hip dislocations. A. LORINC. N York M J & Med Rec, 1922, cxv, 20.

The Lorenz dislocation operation. A. D. ASHLEY. N York M J & Med Rec, 1922, cxv, 20.

Old dislocation of the hip treated by open incision. G. F. MILLER. Surg Clin N Am, 1922, x, 214.

The treatment of old congenital hip dislocations. L. DEUTSCHLAENDER. Deutsche med Wchnsch, 1922, cxv, 1476.

Fracture of the head of the femur with dislocation on the dorsum of the ilium. G. HIRSH. J Am M Ass, 1922, lxxx, 469.

Fractures of the laceral neck. F. BOSTERLICH. Kln Wchnsch, 1922, cxv, 1, 531.

The treatment of subcapital fractures of the neck of the femur. C. E. JAMES. Br J Clin Surg, 1922, cxv, 432.

Treatment of fractures of the shaft of the femur by traction and suspension. M. BRADSHAW. Internat J Surg, 1922, xxxv, 477.

A case of horizontal inferior luxation of the patella. A. HIRSHBERG. Zentralbl f Chir, 1922, l, 61.

A new splint for fractured patella. H. C. MARLAND. J Am M Ass, 1922, lxxx, 59.

Fracture of the semilunar cartilage of the knee with fringe pinching, ablation of cartilage: recovery. P. G. SCHILLER. Surg Clin N Am, 1922, x, 197.

Compound double fracture of the leg with primary closure. T. T. THOMAS. Surg Clin N Am, 1922, x, 83.

Compound fracture of the tibia: fracture of the patella and condyles of the femur, with secondary suppurative arthritis and destruction of the knee joint, amputation of the thigh and closure by secondary suture. J. H. JONES. Surg Clin N Am, 1922, x, 105.

Bone block of extension of the knee due to fracture of the astragali. P. G. SCHILLER. Surg Clin N Am, 1922, x, 124.

Isolated metatarsal phalangeal luxation of the fourth toe. MOCCHET and BRYAN. Bull et mën Soc Anat. de Par 1922, xxi, 440.

A review of the treatment of tuberculosis in the surgical clinic at the University of Moscow during the last thirty-five years. SEMENOV. Verhandl d Kong Russ Chir Pirograd, 1922.

Some points in reconstructive surgery. G. R. GORRUCK. Practitioner, 1922, cx, 456.

The anatomical processes in the regeneration of tendons and in the plastic repair of tendon defects by tendon, fascia, and connective tissue: an experimental study. E. SCHWARTZ. Deutsche Zeitschr f Chir, 1922, cxv, 302.

The principles of bone graft surgery. A. E. MCKINNON. Med Press, 1922, n.s. cv, 7.

The fate of bone transplants in the growing organism. P. G. KOSKOV. Verhandl d Russ Chir Kongr Pirograd, 1922.

Paralysed removal: new techniques in osteology. A. WERNER. Arch f orthop Unfall Chir, 1922, xxi, 309.

The phlegm of bone cavities with free transplants of fat. G. LITKE. Deutsche Zeitschr f Chir, 1922, cxv, 286.

Acute osteomyelitis treated by early incision, recovery. P. B. KRITIK. Lancet, 1922, cxv, 284.

The present status of the treatment of bone and joint tuberculosis. M. FLASCH. Zentralbl f Chir, 1922, cxv, 353.

The results in ten years' experience with iodiform resin treatment of surgical tuberculosis by the method of Hots. GERMANN. Verhandl d Kongr Russ Chir Pirograd, 1922.

Synovectomy in chronic infectious arthritis. P. P. SWERT. J Bone & Joint Surg, 1922, xxi.

A method of laminating plastic operations on the distal radius. F. LIPPINCOTT. Zentralbl f Chir, 1922, cxv, 108.

New arthrodesis of the shoulder. O. E. SCHEIDT. Reichs-lyk Chir, 1922, x, 15.

Arthrodesis and amputation in the treatment of ankylosis of the elbow. W. R. MACALANLAND. Surg Clin N Am, 1922, x, 959.

Resection of the elbow for abel injury: own reconstruction: functional recovery. P. A. PIERCE. Bull et mën Soc anat de Par 1922, xxi, 460.

The operative treatment of accessible radial palsy as by tendons of the paralyzed extensor digitorum of the forearm. V. DANKERT. Br J Clin Surg, 1922, cxv, 457.

Certain phases of surgery of the hand. T. W. HARRIS. Surg Clin N Am, 1922, x, 972.

The use of the index finger for the thumb. J. DUNKER. J Bone & Joint Surg, 1922, xxi, 99.

Partial endometrial resection in the treatment of spastic contractures of the hand in infantile hemiplegia. R. WERNER. Verhandl d Russ Chir Kongr Pirograd, 1922.

The Moberg plastic for contractures of the fingers. H. RABIN. Br J Clin Surg, 1922, cxv, 14.

Lengthening of the extremities. M. ZORNIK. Deutsche med Wchnsch, 1922, cxv, 1473.

The operative treatment of cysts verae stabiles. E. BERNARD. Zentralbl f Chir, 1922, cxv, 381.

The operative treatment of abnormal out and rotation of the hip after infantile paralysis. I. LIPPINCOTT. Zentralbl f Chir, 1922, cxv, 73.

The formation of a new hip joint by plastic modeling of the bones. P. GEAR. Arch f orthop Unfall Chir, 1922, xxi, 9.

Amputation at the thigh. R. FROCHTER. Semmelweis, 1922, xxx, 307.

The advantages of extruding the head of the fibula in amputation of the leg, on the basis of personal experience.

## Surgery of the Bones, Joints, Muscles, Tendons, Etc

Inoculation tuberculosis and its surgical treatment. G. STEIN. Wchnsch Wchnsch, 1922, cxv, 40.

- A. LEHRMANN: Arch f orthop Unfall Chir 92  
[446]  
Pen articular fixation of the knee joint O E. SCHULZ  
Camp M. J. 92 12, 926  
Operative substitution of the patella S. KOWMAN  
Zentralbl f Chir 9 xlii, 857  
Amputation of the leg & the knee by De la Vedova  
method A. TOMASSO Gazz med Permana, 9 3, 1, 20  
Two cases of tendon necrosis following osteotomy in  
the leg J. MULLER Arch f orthop Unfall Chir  
1922, xii, 293  
The conservation of muscles in paralytic deformities of  
the foot P. W. ROBERTS J Bone & Joint Surg 9 3  
[447]  
The question of operative procedures for deformities of  
the foot G. EISENBERG Verhandl d Russ Chir Pirogoff  
Ges 92 [448]  
The modern treatment of club-foot E. VO. DER OETTER  
Meyers Wortschatz Westsch, Woldia, 92 p 54  
The anatomical changes in the ankle in club-foot, and  
the results of tube extirpation T. YUK Arch f orthop  
Unfall Chir 1922, xii, 3  
The correction of congenital club foot E. H. BRADFORD  
N York M J & Med Rec 1923, cxvii, 20
- The treatment of severe case of callosal spur TAYLOR  
Med Klin 923, xii, 56  
An operation for hallux valgus P. W. ROBERTS J  
Am M 1923, 9 3, 122, 540
- Orthopedics in General  
An orthopedic operative table J. V. AUSTIN Ztschr  
f orthop Chir 9 xlii, 6  
The modern scope of orthopedic surgery J. E. M. THOMSON  
Nebraska State M J 9 3, 12, 67  
Orthopedic aspects of poliomyelitis C. E. COO Am  
J Surg 9 3, 122, 7  
The field of muscle training in orthopedic surgery A.  
WATKINS Dental Cosmos, 923, ix, 57  
Occupational therapy for arthritis L. T. SWAIN Mod  
Hosp 9 3, ix, 30  
Recent advances in prosthesis technique J. MILLER  
G. 923, ix, 9 7  
The results of exercises for the correction of postural  
defects A. J. COO N York M J & Med Rec 923  
cxvii, 5  
An unusual type of supporting corset F. S. ARTEL  
Ztschr f orthop Chir 92 xlii, 5

## SURGERY OF THE SPINAL COLUMN AND CORD

- A rare anomaly of the cervical vertebrae A. WALLGREN  
Zentralbl f Chir 9 xlii, 578  
A case of congenital anomaly of the spine G. WERNER  
Ztschr f orthop Chir 923, xlii, 3  
Congenital curvature of the spine as an intra terine  
defect of right bearing M. HICKER-SHOCK Arch  
f orthop Unfall Chir 923, xlii, 566 [446]  
Scoliosis CALDWELL Arch med Belges 9 3, 122, 124  
Secondary effect of scoliosis on the internal organs T.  
TOURNE J Med Ass Georgia, 923, xii, 77  
Structural scoliosis complicated by paralysis of the  
lower limbs S. KILIANOWSKI J Bone & Joint Surg 9 3  
[447]  
Injuries to the spine not involving the cord O. J. F.  
J. Iowa State M. Soc 92 12, 45  
The diagnosis and treatment of minor injuries to the  
lumbar spine and sacro-coccygeal joints M. B. COOPERMAN  
N York M J & Med Rec 923, cxvii, 59  
I. Fractures of the spine especially by indirect force  
occurring in the cervical portion & the typical location  
II. A case of Kummel fracture of the dorsal vertebra  
F. HARTZ Deutsche Ztschr f Chir 9 xlii, 143  
Vertebral fractures with cord involvement J. W.  
MAYNARD J Iowa State M Soc 9 2, 12, 454  
Fracture of the spine with cord involvement W. J.  
MAYNARD J Bone & Joint Surg 923, xlii, 143 [446]  
An unusual case of typhoid spine with symptoms of  
spinal cord affection H. TURNER Brit M J 9 3, 1, 124  
[447]  
Spondylitis in children L. LEONIKOFF Verhandl d  
Russ Chir Pirogoff-Ges Petrograd 9  
Leukemic disease of the vertebrae E. MYLONOFF  
Zentralbl f Chir 9 xlii, 727
- A case of bridge formation in the lumbar portion of the  
spine in tuberculous spondylitis G. SCHROEDER Klin  
Wochenschr 9 4, 2335  
Albee operation in Pott's disease and its modification  
in children and in the presence of fistulae G. J. J. J.  
Schnitzler chur Behl d Gesellschaft f theor klin Med  
Austria, 9  
A propping operation on the articular column thoughts  
on the operative treatment of spondylitis V. HOFMANN  
Zentralbl f Chir 1923, xlii, 443 [447]  
Albee operation in tuberculous spondylitis F. ROSE  
Wortschatz Dyck, 923, ix, 3  
The problem of gibbons and the Albee operation B.  
FELIX Bratislava lekarska listy 922, ii, 37  
Contribution to subject of suppurative osteomyelitis of  
the spine E. TRAMER Arch f klin Chir 9 cxvii, 50  
Traumatic osteomyelitis of the spinal column and of  
the ribs in infancy E. DUBOIS Mod medic f kinderh  
923, xlii, 496  
On lumbar arthritis A. LITZ Am J Can Med 923  
xlii, 93 [447]  
The so-called railway spine F. W. Carruthers South  
M J 923, xlii, 6  
Is the surviving sensibility of the last sacral segment  
differential diagnostic sign between extramedullary and  
intramedullary affections of the spinal cord? W. KUPPOLA  
Duodecim, Helsinki, 9, xlii, 302  
Report of case of epidural lacera of the spinal canal  
E. M. GREEN Prognosis M J 9 3, xlii, 103  
A gunshot wound of the spinal cord laminectomy cure  
R. SIMON Rev de med y chir de la Habana, 9 3,  
xlii, 5  
Broadbent lectures on the surgery of the spinal cord W.  
THORNTON Lancet, 9 cxvii, 33



## SURGERY OF THE NERVOUS SYSTEM

The stimulation theory of the pathogenesis of trophic disturbances in injuries of the peripheral nervous system of the extremities in the light of the facts of the newest surgical therapy. A I POLOVOY. *Westnik Chir i gignia obshch.* 1922, 1, 7.

The effect of the ablation of the superior cervical sympathetic ganglia upon the corticospinal life. M I. APOSTOLSKY. *Endocrinology* 1922, vii, 74.

Transplantation of spinal nerve roots in lateral paralysis. L. PLOTNICK. *Eur. arch.* 1922, 1, 44. [448]

Neuroma of the noncervical nerve above the elbow neuritis. P G SKILLERN. *Surg. Clin. N. Am.* 1922, ix, 3.

Peri-arterial sympathectomy. E P LATHAN. *Ann. Surg.* 1922, lxxvii, 30. [449]

Peri-arterial sympathectomy. A E. HALLSTAD and J. CHRISTENSEN. *J. Am. M. Ass.* 1922, lxxx, 172. [448]

Arterial decortication. C. L. CALLAGHER. *Ann. Surg.* 1922, lxxvii, 5. [449]

The healing of trophic ulcer after operation on the sciatic nerve. MOLOTKOV. *Westnik Chir i gignia obshch.* 1922, 1, 103.

The surgical treatment of chronic sciatica. W J TAYLOR. *N. York M. J. & Med. Rec.* 1922, cxvi, 602. [450]

Cavernous angioma in the peripheral nervous system. R. ROSENTHAL. *Deutsche Zeitsch. f. Chir.* 1922, clxxxv, 45. [450]

## MISCELLANEOUS

## Clinical Entities—General Physiological Conditions

The spectra of starvation. L. VASSILIEWSKI. *Westnik Ulenskovo Guberskoye*, 1922, 1, 1.

The influence of the hunger, cold, and poverty of the Ukrainians on present-day surgery. W. SCHLACK. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1922.

The quantity of total acetone and beta-oxibutyric acid in the urine in acidosis; different methods of determining acetone. M. LARSEN, H. LARSEN, and F. NEPSTED. *Pross. med. Far.* 1922, xxxi, 11.

Cases of delayed and immediate asphyxiation shock with note on the circulatory phenomena. J. FAWCETT and J. A. RYAN. *Brit. M. J.* 1922, i, 305.

Urticaria and hemiplegia: the rôle of the sympathetic nervous system in the localization of certain chemical manifestations of shock. J. LEROUX, and T. ALAJOUCAT. *Pross. med. Far.* 1922, xxxi, 67.

Serological shock. L. A. KERNER. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1922.

Experimental investigations on the prophylaxis and therapy of surgical shock. T. KIKUCHI. *Zeitsch. f. Japan. Chir. Geseh.* 1922, xxxv, 662.

Postoperative tetanus and proptosis. H. W. STEVENS. *Viertel. J. Chir. Geseh.* 1922, lxxvi, 1020.

Tumor necrosis due to an alkali prick. F. GASS. *Deutsche med. Wochenschr.* 1922, xlviii, 182. [450]

Tetanus of severe superficial burns in children. B. ROSENTHAL and G. BOTO. *Am. J. Dis. Child.* 1922, xiv, 161.

The so-called sweat gland abscesses of the anils. F. ROSE. *Klin. Wochenschr.* 1922, i, 183.

Eberthian abscess. J. DREIER. 10 and J. W. TOWNS. *Semin. med.* 1922, xxi, 161.

Zinc ions in peptic abscess. M. WARDER. *Practitioner* 1922, cx, 95.

Observations on the origin, causation and treatment of rodent ulcer. M. PAUL. *Med. J. Australia*, 1922, i, 45. [451]

Contributions to the etiology and treatment of leg ulcers. S. GASS. *Gyógyászat*, 1922, p. 100.

The treatment of callosities of the leg by injections. F. von der HERTZEN. *München med. Wochenschr.* 1922, lxxviii, 1603.

The treatment of Oriental sore by phosphorated oil. A. CASTELLANI. *Brit. M. J.* 1922, i, 385.

Carbonic acid of the back of the neck, extension of the caruncle by the electrocautery knife, followed by Carrel

Dakin treatment of the wound. J. H. JORDON. *Surg. Clin. N. Am.* 1922, ix, 93.

The treatment of carbuncle. F. ROSENTHAL DE SELAS. *Arch. de med. chir. y special.* 1922, x, 375.

Tetanus following gunshot wounds. J. F. DORTCH. *Westnik Chir i gignia obshch.* 1922, 1, 69.

Bubo of Valer (ingrinal lymphadenitis). A. P. CHAVAKIA. *Report de med. y chir.* 1922, xiv, 51.

The treatment of some (cancerous) aural, particularly during the stage of progressive ulceration and sequestration. L. A. GOLJANITSKY. *Sbornik d. Geseh. f. thour. prakt. Med., Astrakhan*, 1922.

A contribution to our knowledge of some. E. von BALOGH. *Wien. med. Wochenschr.* 1922, lxxvi, 1742. [452]

Gangrene in typhus fever. A. DIMITRIYEV. *Wied. schenke Dudo*, 1922, ix, 35.

Conservative operative methods in the treatment of gangrene of the lower extremities following typhus. A. GOLJANITSKY. *Wiedschonoye Ispiski Tskhovo Geseh.* 1922, p. 1.

The relationship between trauma and tumors. C. LACROIX. *Polich. Revue*, 1922, xxx, 202, 203, 204.

Intraocular myoma. A. MARY KOLB. *Beitr. Klin. Chir.* 1922, cxviii, 405.

A case of multiple myxoma. G. MCCORMACK. *Am. J. M. Sc.* 1922, cliv, 84. [451]

Hodgkin's disease. LORRAINE. *Brit. et med. Soc. ann.* de Far. 1922, xiv, 483.

Cancer. R. M. HANSEN. *Thron. M. J.* 1922, xiv, 109.

Review of the present status of the cancer problem. M. BEATTY. *Semin. med.* 1922, xxi, 301.

Remarks on cancer. A. D. WILLIAMS. *Med. Herald* 1922, xii, 54.

Biological evidence for the inheritability of cancer as seen in studies in the incidence and inheritability of spontaneous tumors in mice. M. SALT. *J. Cancer Research*, 1922, vii, 107.

The present state of health of persons with cancer-tumors and cancer-tuberculosis and cancer. K. HANSEN. *Hosp. Tid.* 1922, lxxv, 35.

Cancer as preventable disease. J. C. BLOOMFIELD. *Semin. M. & S. J.* 1922, clxxxviii, 206.

The mechano-chemical theory of the development of malignant tumors. N. KROTHKA. *Verhandl. d. Russ. Chir. Kongr. Petrograd*, 1922.

The function of connective tissue in the experimental production of cancer. R. BRANCH. *Arch. i path. Anat.* 1922, clxxxviii, 1451.

The effects of the X rays upon the transplantation of mouse carcinoma. C. ASAMI. *Zschr. f. Japan chir Gesellsch.* 923, xxiii, 625

The symptomatology of cancer. E. P. ROBINSON. *Am Med.* 923, xxx, 97

Cancer as an oral patient problem. H. F. D. Y. Boston M. & S. J. 1923, cxxxviii, 215

Progress and results in cancer control. F. L. HOFFMAN. Boston M. & S. J. 1923, cxxxviii, 21

The limits of spontaneous healing of malignant tumors in the animal and human organism. N. P. TRIVELLER. *Arch. f. klin. Chir.* 923, cxxx, 51

Cystic ectoplastic carcinomas as compared with the sarcomas form. F. J. LANG and W. KRAUSE. *Frankfurt Zschr. f. Path.*, 923, xxviii, 530 [452]

Paritylized hyperplasia and bone destruction in gross allied carcinomas. P. KLEINER. *Surrg. Gynec. & Obst.*, 923, xxxvi, [452]

Cancer and the more recent methods of treatment. J. M. BAKER. *South M. & S. Q.* 923, lxxxv, 26

The early treatment of cancer. H. SALTZSTEIN. *J. Am. M. Ass.* 923, lxxx, 448

The most important points of view of the recent invention and treatment of cancer. K. FRIEDRICH. *Deutsche Zschr. f. Chir.* 923, cxxxv, 359

The treatment of superficial cancer, with statistics and technique. D. T. QUIGLEY. *Ann. J. Roentgenol.* 923, x, 16

The histogenesis of the cancer. H. T. DEKLEA. *Zschr. f. Krebsforsch.* 923, xxx, 5

Gonorrheic sarcomas of the apilia. J. P. TOCHETUX and C. CARANET. *Bull. et mèm. Soc. anat. de Par.* 923, xcii, 510

Lymphosarcomas. R. KORTSCHEVOY. *Zentralbl. f. allg. Path. path. Anat.* 923, xciii, 145

### Sera, Vaccines, and Ferment

The diagnostic value of the serological intracutaneous reaction in carcinoma. E. SCHLOER. *Med. Klin.* 923, xxvi, 374

The treatment of staphylococci with horse serum. W. REIDER. *Klin. Wchnsch.* 923, 4, 333

The problem of anti streptococcus serum. A. WOLFF. *Arch. de med. chir. y espec.* 923, 30

Studies on the blood ferments in man and animals in sarcoma and certain infections. J. GROS. *Acta med. Scand.* 923, Supp. iii, 285

### Blood

On the contents of more than four hundred groups of human blood. C. G. OSTERHOFF and J. G. H. CA. *Bull. Johns Hopkins Hosp.* Balt. 923, xxviii, 37 [453]

The influence of oil of turpentine upon leucocytes. W. J. NIXON. *Surrg. Gynec. & Obst.* 1923, xciii, 40

Blood destruction during exercise. III. Exercise as bone marrow stimulus. G. O. BROS. *J. Exper. Med.* 1923, xciii, 87

Blood destruction during exercise. IV. The development of equilibrium between blood destruction and regeneration after period of training. G. O. BROS. *J. Exper. Med.* 1923, xciii, 207

Functional tests of the circulation and their significance. W. W. HENNING. *N. York State J. M.* 923, xciii, 53

Blood sugar standards. Part I. Normal and diabetic forms. H. GRAY. *Int. J. Med.* 923, xciii, 24

Blood sugar standards. Part II. I conditions neither normal nor diabetic. *Arch. Int. Med.* 923, xciii, 59

Does menstruation influence blood concentration? M. TYLER and F. P. UNDERHILL. *Am. J. Obst. & Gynec.* 923, 55 [454]

Blood chemical analysis in diagnosis and treatment. F. B. JOSEPH. *J. South Carolina M. Ass.* 923, xii, 402

Blood examinations in twelve cases after iodiform iodine injections. NIKOLAI. *Verhandl. d. Kong. Russ. Chir. Petrograd.* 923

The value of blood chemistry in clinical diagnosis. B. C. F. ED. WILSON. *M. J.* 923, xii, 39

The importance of the relationship between the blood pressure and the number of cells in health and disease. I. LARAS. *Riforma med.* 923, xciii, 5

The theoretical basis and practical application of blood-pressure estimations in surgical operations. A. LARAS. *Beitr. klin. Chir.* 923, cxxxv, 29 [453]

Investigations regarding vasoconstricting substances in the blood. W. HUTTEN. *Klin. Wchnsch.* 923, 4, 4

The influence of various factors in parenchymatous hemorrhage. I. A. GOK. *Trud. Sotsnab. d. Gmedich. f. teor. prakt. Med. Astrakhan.* 923

The control of capillary and parenchymatous bleeding. P. ALBRECHT. *Wchnsch.* 923, xciii, 4

The total circulating volume of blood and plasma in cases of chronic anemia and leukemia. N. M. KAUTZ. *Am. J. M. Sc.* 923, cliv, 4

Treatment of leukemias by means of the X-rays. J. W. LAYMAN. *J. Med. Ass. Georgia.* 923, xii, 5

The transfusion of blood in acute posthemorrhagic anemia. V. A. NICOLA. *Trud. Med. rev.* 923, xciii, 89 [454]

A simple procedure for blood transfusion. H. VAN. *Arch. franco-belges de chir.* 923, xciii, 2

The transfusion of blood from unimmunized donors. L. J. UNDER. *Laryngoscope.* 923, xciii, 45

Intraperitoneal transfusion with citrated blood: an experimental study. D. M. SARTANEN. *nd J. M. SARTANEN.* *Am. J. Dis. Child.* 923, xiv, 7 [454]

### Blood and Lymph Vessel

An extremely large aneurysm in an infant 12 months old. A. MOCHELET. *Bull. et mèm. Soc. anat. de Pa.* 923, xciii, 44

The presence of vasoconstricting substance in the blood serum of persons with endarteritis obliterans. M. N. VORONIN. *Westnik Chir. posred. oblaten.* 923, 4, 96

Fatal thromboarteritis of the right middle cerebral artery of uncertain causation. F. P. WILSON. *Brit. M. J.* 923, 3, 4

Thrombophlebitis of the lateral uvea. M. VIVO. *Rev. med. d. Uruguay.* 923, xciii, 14

Wounds of the common carotid. D. CALLEA. *Arch. tal. de chir.* 923, 4, 433 [454]

A case of arteriovenous aneurysm of the subclavian artery. The rev. of the circulation of the arm. contribution to the functional transformation of blood vessels. II. TIGER. *Zentralbl. f. Chir.* 923, xii, 50 [455]

Wound and electrolysis of aortic aneurysm—report of case. R. D. FORBES. *Therap. Gaz.* 923, 3, 3 [456]

Abdominal aortitis. M. G. OLARICHA. *Cron. med. Lima.* 923, xciii, 336

Infarction of the mesenteric vessels following aortic thrombosis. Intestinal resection. death. infarction of both kidneys and of the spleen. found. T. SATO. *J. BRAVET.* *Bull. et mèm. Soc. anat. de Par.* 923, xciii, 499

Rupture of the renal artery and vein by slight injury. E. M. ATTEN. *Brit. M. J.* 923, 3, 4, 5, 4

Partial parietal and congenital aneurysm. F. DUBOIS. *Arch. f. orthop. Unfall Chir.* 923, xii, 83



- Medical uses and institutions of Petrograd in 1917 and 1918 M ZILAROVA Minnesota Med 9 3 vi, 74  
 The British voluntary hospitals today V BURNETT Med Hosp 923, xi, 3  
 Hospital development in Holland J L C WORTHMAN Med Hosp 1923, xi, 53  
 Hospital developments in Germany and Austria J GUCKER Med Hosp 9 3, xi, 245  
 Hospitals in Japan H J HOWARD and W G LYNCH Med Hosp 9 3, xi, 19  
 The new children pavilion of Mount Sinai Hospital, New York A W BRUNNER and S S GOLDENBERG Med Hosp 1923, xi, 36  
 The new plant of the Vanderbilt University Medical School and Hospital, Cookston, Smucker, Swift and Rosovsky Med Hosp 9 3 xi, 39

- Royal Victoria Hospital's metabolism service E H MASOV and H E WINTER Med Hosp 9 3, xi, 43  
 Louis Pasteur I GERRARD-FIELDS N York M J & Med Rec 923, xvii, 3  
 Life and work of Louis Pasteur C C BONE Calcutta M J 923, xvii Supp 3  
 Pasteur first patient M W TAYLOR N York M J & Med Rec 9 3, xvii, 35  
 Charles M Burney C H PICK Surg Gynec & Obst 9 3, xcvi, 410

## Legal Medicine

- Responsibility for payment of physicians in accident cases From Glasgow, 7 Atlantic Rep p 547 [461]

## GYNECOLOGY

## Uterus

- Uterine secretion an experimental investigation into its effect upon the coagulation of the blood I KROHN Surg Gynec & Obst, 9 3, xcvi, 7 [462]  
 Ligation of the uterus and its conservative treatment by anterior colpotomy G MACVICAR Gynec et Obst 9 3, vi, 37  
 Venodilation of the testes and its complications from B TERNSTROM Deutsche Ztschr f Chir 9 3, xcvi, 36 [463]  
 The diagnostic significance of uterine hemorrhage M DONALDSON Practitioner 9 3, xi, 65  
 Radium in the treatment of uterine hemorrhage of non malignant type E A WILSON Am J Obst & Gynec 1923, 38 [463]  
 Radiation in the treatment of menorrhagia D A REVERENT J Arkansas M Soc 9 3, vii, 75  
 The X-ray treatment of uterine hemorrhage and fibroid tumor J S DIXON J Med Ass Georgia, 923, xii, 50  
 Certain varieties and complications of terine fibromata M E BONAKETTI Arch Obstet Gynec 923, xvi, 74  
 The present status of surgery in the treatment of fibromyomatous uterus E C TRACY Am J Obst & Gynec 1923, v, 35  
 The indications for and the results of myomectomy A E GILES J Obst & Gynec Brit Emp 9 3, xcvi, 463 [463]  
 The modern scope and technique of myomectomy V BOWEN J Obst & Gynec Brit Emp 9 3, xcvi, 50 [463]  
 Chorioepithelioma E LOANIER Beitr Klin Chir 1923, xcvi, 56  
 The treatment of hydatidiform mole and chorio-epithelioma, with consideration of the relative frequency of each O A GORDON Surg Gynec & Obst 923, xcvi, 423 [464]  
 Chronic endometritis and its treatment J W BURNS J Obst & Gynec Brit Emp 9 3, xcvi, 69 [465]  
 The cervix a focal point of infection G L DICKINSON Am J Obst & Gynec 9 3, 4  
 Problems concerning infections of the cervix, the body of the uterus, and the fallopian tubes A H COTTON J Am M Ass 9 3, lxxx, 6  
 The diagnosis of cancer of the uterus O C MASON Minnesota Med 9 3, vi, 74 [466]  
 Radium treatment in cancer of the cervix C D BROWNE and W R CLIFTON J Michigan State M Soc 1923, xii, 80

- The use of radium in treatment of cancer of the cervix O D HALL J M Ass Georgia 923, xii, 45 [466]  
 Some points in the technique of hysterectomy for cancer of the cervix J D FOURMESTRAUX Bruxelles med 9 3, iii, 306  
 Cancer of the cervical stump after hysterectomy J C ARMBRAD Bol del Soc de obst y gynec de Buenos Aires 9 3, 75

## Adnexal and Peri Uterine Condition

- Adnexal disease in childhood and its importance in the differential diagnosis of appendicitis I SCHMITZ Med Klin 9 3, xcvi, 77  
 Varicocele of the broad ligament J W MILLER Zentralbl f Gynaek 9 3, xlv, 370  
 Varicocele of the broad ligament or pelvic ancocele E E OELMANN Zentralbl f Gynaek 923, xlv, 374  
 Fibroma of the round ligament G GART Polichin Rome 9 3, xcvi, set prat 77  
 Torsion of the uterine adnexa M COHEN J Am M Ass 9 3, lxxx, 38  
 The lipoid content morphologically demonstrable in human fallopian tubes I SCHMITZ Arch Obstet Gynec 9 3, xi, 6  
 The radiation of pain in lesions of the fallopian tube M MARCUS Brit M J 923, 2, 8  
 Multilocular parovarian cyst J B DIXON Surg Clin N Am 9 3, lxx, 111  
 Ruptured graafian follicle simulating pyrochitis I S R VON Surg Clin N Am 9 3, xi, 775  
 Haemorrhagic cyst of the ovary with peritoneal inundation P A MAYER Bull et mém Soc Acad de Par 9 3, xcvi, 507  
 Fibromata of the ovary M R HOON Surg Gynec & Obst 923, xcvi, 47 [467]

## External Genitalia

- Fibrosclerosis of the left labium majus W R LOWRANCE J Am M Ass 9 3, lxxx, 375  
 Bilateral resection of the podendral nerves for vulval pruritus V W MARKOFF Resch Gynaek Westnik 9 3, 81 [467]  
 A clinical investigation of vulvovaginitis I F STEIN Surg Gynec & Obst 9 3, xcvi, 43  
 A case of extensive gangrene of the vulva following typhus M S SCHENK Westnik Chir postr obstetr, 9 3, 79



- Acute complete inversion of the uterus L W HAYMES  
J Michigan State M. Soc 923, xxx, 75 [472]
- The question of cesarean section S A DRAWICK  
Med. J. Walskova Uchastniko Sowjeta pri Gubadrawt  
ide, 1921, p. 2.
- Incisions for, and technique of, cesarean section  
H A MILLER Pennsylvania M J 923, xxvi, 89
- The chemical cesarean section under local anesthesia  
with temporary fixation of the fetus E WALDENSTEDT  
Wien klin. Wchnsch 9 23, 85 [473]
- The management of the placenta in abdominal pregnancy  
with case report W A JEWETT Am J Obst  
& Gynec 923, v 76

## Newborn

- Intrauterine trauma in the newborn N B CAPON J  
Obst & Gynec Brit Emp 922 xxx 572
- Prenatal amputations R KUK Arch f orthop  
Unfall Chir 922 xxx, 53
- Fetal malformations in case of dystocia due to asites  
and retention of urine C LERNER Bull et. mēm. Soc  
anat de Par 9 2, xxx 43
- The association of fetal monstrosities and deformities  
with placenta previa J P GILBERT Surg Gynec &  
Obst 9 3 xxxvi 227 [473]
- Intrapertoneal infusion WIEVERICK Deutsche med  
Wchnsch 9 23, 577 [473]

## Puerperium and Its Complication

- Purpural occlusion of the mesenteric vessels and the  
ecology of general thrombosis HUGGER Wien klin  
Wchnsch 922, xxv 218
- Puerperal sepsis T W LEECOMB Med J Australia,  
1923, 1, 69
- Blood crises in pathologic and normal puerpera N P  
COTTA Semina med 923, xxx, 37
- Preventive treatment of puerperal fever by blocking  
and postural methods S HANSENBERG Am Med 923,  
xxx, 77
- The prognosis in puerperal infection HANSENBERG  
Monatschr f Geburtst Gynaek 9 12, 30
- Anti-streptococcus serum in puerperal infection W  
URVOY Med Press, 9 2, cv 35
- Hysterectomy in puerperal infection COHEN J de  
med de Bordeaux, 923, xxv 9
- The intradural reaction to tuberculin in the puerperium  
and the newborn M L PÄTZ Semina med 923, xxx,  
122
- Aids in penicillin therapy H SCHWAB Med klin 9  
23, 1435

## Miscellaneous

- The service of an obstetrical clinic to the community  
A H MORSE Am J Obst & Gynec 923, v 70
- The present standard of obstetrical practice in rural  
Pennsylvania C G B ENGBAUM Pennsylvania M J  
9 3, xxxi, 283
- The value of ergot in obstetrical and gynecological prac-  
tice with special reference to its present position in the  
British pharmacopoeia H H DALL Proc Roy Soc  
Med 9 3, xv Sec Obst & Gynec
- The more important obstetrical emergencies met by the  
general practitioner G V JANTNER Pennsylvania M J  
9 3, xxxi, 34
- Blood transfusion in obstetrics W R BARNEY Ohio  
State M J 923, xix
- Observations on the Wassermann reaction in obstetrics  
GAUJOUR and FOLGHER Rev franc de gynéc. et  
d'obst 922, xvi, 530
- A contribution to the study of the decidual reaction  
J TORRES BLA CO Prog de la clin Madrid, 9 3, xxv  
69

## GENTTO-URINARY SURGERY

## Adrenal Kidney and Ureter

- Syphilis of the adrenals W H DEARBORN Am J  
Syphilis, 923, vi, 72
- Pathologic conditions in case of Addison's disease E  
E HILVER Brit M J 923, 1, 35
- Demonstration of patient in whom the left adrenal is  
involved because of gangrene of the leg S S GREGORY  
Washk Chir. postgrad. obster, 923, 85
- Hypoplasia peronealis O CORREIA Ztschr f urol  
Chir 923, xi, 69
- A case of bilateral subacute suppurative pneumococcal  
pyelitis H HANCOCK Ztschr f urol Chir 92  
[474]
- Simple renal ectopia F CASTRO Semina med 923  
xxx, 203
- A new method of making ureteropyelograms N P  
SEARS Surg Gynec & Obst 923, xxxvi 274 [474]
- Calculus of the kidney and ureter I S COVINA Prog  
de la clin Madrid, 9 3, xxv 93
- Double kidney in suspected calculi in both pelvis  
E L ELLISON Surg Clin N Am 9 3, iii 41
- Two cases of horseshoe kidney C MORSON Brit M  
J 923, 1, 30
- Treatment of the kidney T P SHUTE Ohio State  
M J 9 3, xxx 64
- Aches and pains of renal origin A FULLERTON Cana-  
dian M J Am J 9 3, xii, 85 [474]

- The diagnosis of vascular renal disease N B FOSTER J  
Iowa State M Soc 923, xxi, 5
- Determination of kidney efficiency K M LYNN  
Texas State J M 9 3, xviii, 501
- The use of creatinin as test of renal function R H  
MAYOR J Am M Ass 9 3, lxxx, 354 [474]
- Renal glycosuria, with report of case C T STON  
Texas State J M 9 3, xviii 58
- A case of renal glycosuria W ALLAN J Am M Ass  
923, lxxx, 47
- Gonococcal infection of the kidney J D BARNETT J  
Urol 923, ix, 79 [474]
- Some cystoscopic appearances in tuberculous of the  
urinary tract W G BALL Brit J Surg 9 3, x, 216 [474]
- Healed renal tuberculous C C BIRKELLO J Radiol  
9 3, 63
- Renal tuberculous cured by nephrectomy A N SIL-  
VERSTEIN and E B RANIER Semina med 9 3, xxx 30
- The treatment of pyelitis C H CHRISTODOULOU J Urol  
923, ix, 87 [474]
- Chloride retention in experimental hydronephrosis N  
M KATZ and D S FULFORD J J Exper Med 9 3  
xxxvii, 75
- Hydronephrosis E L ELLISON Surg Clin N Am  
923, iii, 5
- Experimental hydronephrosis, the significance of com-  
pensatory hypertrophy and disuse atrophy to repair P  
HIVERT J Am M Ass 9 3, lxxx, 35 [474]



- A case of bilateral malignancy of the testes L O  
TAYLOR California State J M 9 3, xii, 55  
Cystic lymphoscrosis of the scrotum, surgical removal,  
recurrence treatment by radiotherapy cure M OULARD  
J dent med et chir 923 xiv 33

## Miscellaneous

- A new cysto urethroscope for examining and operating  
on any part of the urinary tract by direct telescope or  
indirect periscope method G S GORDON Canadian M  
Am J 9 3, xii,  
Radiography of the urinary tract during the excre-  
tion of sodium iodide E D O'BOWEN, C G ST THIRLAND  
A J CROWE and L D ROWNTREE J Am M Ass 9 3,  
lxix, 368 [484]  
Venereal disease as a casualty W BETT Proc  
Roy Soc Med Lond 9 3, xvi, War Sect  
The action of stronger solutions of mercurochrome in  
study gonorrheal infections F RUTEL J Am M Ass  
923 lxix, 350

- Not on the treatment of gonorrhea J W LA MAY  
Therap Gaz 9 3 3, xiii, 95  
The standard of cure in the treatment of gonorrhea  
W L HARRATT B t M J 923, 4, 357  
The treatment of inflamed inguinal glands O ARLE-  
WED Am J Clin Med 923, vii, 7  
A preliminary report regarding the germicidal char-  
acter of the emanations from colloids of certain silver  
salts E G BAILEY and O F ELLER J Urol  
9 3 ix 37  
Orthostatic albuminuria W E POS and W A  
THOMAS J Am M Ass 9 3, lxix, 393  
Urino as diagnostic and therapeutic agent T W  
DRACHMA J Am Inst Homoeop 9 3, xi, 724  
The mechanism of the formation of urinary calculi L  
D KIRBY Ann Surg 9 3, lxviii, [484]  
Cystic calculi, complex surgical problem report of  
case of multiple cystic calculi C E TERNAN J Am  
M Ass 9 3, lxix, 395 [485]  
The post-operative care of urinary cases A I CRUTE  
South M J 9 3, xi, 24

## SURGERY OF THE EYE AND EAR

## Ey

- Palpating exophthalmos L B WHITEAM Am J  
Ophth, 923, 48 [486]  
An experience with some cases of foreign body in the  
eyeball W B SWALL J Iowa State M Soc 9 3, xii,  
41 [486]  
The external operation of the lacrimal sac W B  
CRAMERLY J Indiana State M Ass 9 3, xi, 43 [486]  
Plastic operation for contracted socket M W B  
CURRY Proc Roy Soc Med Lond 9 3, xvi, Sect  
Ophth 7  
Foreign body removed from the orbit H V GARTHELL  
Brit M J 9 3, 33  
Hemorrhages of the orbit L PATO Proc Roy Soc  
Med Lond 9 3, xvi, Sect Ophth 5  
Final results of carcinoma of the orbit probably origina-  
ting in the lacrimal gland C N HOWARD Am J  
Ophth 9 3, vi, 5  
The eye in aviation—some experiences in the work of  
the Department of Ophthalmology Medical Research  
Laboratory Third Aviation Instruction Center A E F  
FINCH C BIRNBA, J Mid Surgeon 9 3, li, 35  
A new theory regarding vision J SCHWAB Arch de  
med exp 9 3, 320  
Better eyes make better children W M CARMARY  
Med Times, 9 3, li, 40  
A statistical enquiry into 1000 cases of eye injuries A  
GARNOW Brit J Ophth 923, vii, 6  
Results after orbital and ocular battle injuries R A  
FERRO Mid Surgeon, 9 3, li, 95  
Combat wound of the orbit, operation, recovery J A  
MORGAN Am J Ophth 923, vi, 29  
Industrial eye injuries F ALLPORT Illinois M J,  
923, xlii, 245 [487]  
A case of bilateral proptosis with limitation of the move-  
ment of one eye R A GUTHRIE Proc Roy Soc Med  
Lond 923, xvi, Sect Ophth 7  
Heterophoria L W FOX Am J Ophth 9 3, vi,  
Transfer of function of ocular muscles E JACKSON  
Am J Ophth 923, vi, 7  
A study on strabismus E LANDOL Am J Ophth,  
923, vi, 93 [487]

- Pre- operation of patients operated upon for strabismus  
M M AMAR Suppl med 9 3, lvi, 97  
Tenotomy of the inferior oblique J L MCCOOK Am  
J Ophth 9 3  
Considerations of ocular vergence G F ALEXANDER  
Am J Ophth 9 3, vi  
Oral manifestations in hypophyseal epithelium F P  
CALHOUN Am J Ophth 9 3, 95  
The diagnosis of optic neuritis due to toxemia disease  
J N HOFFMAN N York M J & Med Rec 9 3, cxvii,  
42  
Trachoma J W WRIGHT Ohio State M J 923, xii,  
The care of traumatism of the cornea S R GIFFORD  
Med Herald, 923, xlii, 98  
Retrolental larvicide report of case F S OSBORNE  
J Am M Ass 9 3, lxix, 318  
A preliminary report on observations on localized ma-  
changers S P SCHUL N York M J & Med Rec 923,  
cxvii  
The diagnosis and treatment of iritis F TIERNEY  
Gac med Peruvia 9 3, 4  
Cases of metastatic carcinoma of the choroid and iris  
C H VORNER Brit J Ophth 923, vi,  
Case of ectopic lens (both eyes) M L HIRV Proc  
Roy Soc Med Lond 923, xvi, Sect Ophth 14  
The treatment of early cataracts in the scull lens, with  
demonstration of six cases W B I POLLOCK Glasgow  
M J 9 3, xvi, 3  
A consideration of cataract procedures W F HARDY  
Am J Ophth 92, v, 96  
One hundred consecutive cataract operations F A  
KACOR Am J Ophth, 9 3, vi, 26  
Cataract extraction followed by symptoms suggestive  
of sympathetic ophthalmitis F FEROLS Brit M J  
9 3, 5  
Vision after cataract extraction F NICHOLAS Am J  
Ophth 923, vi, 3  
Acute detrusus following cataract operation, case report  
A O PRINCE Kentucky M J 923, xii, 98  
Recurrent hemorrhage into the vitreous M J JOYNT  
J Iowa State M Soc 923, xii, 45  
Intra-ocular malignant tumors in young children C J  
ADAMS Am J Ophth 93, 967





X-ray treatment of tonsillar and lymphoid tissue J H TUNNICLIFFE *Ann. Otol. Rhinol. & Laryngol.* 1923 xxxii, 1944. [491]

A study of the tonsil question, with preliminary report of roentgen ray and radium therapy in the treatment of pathologic tonsils L A LARK *Minnesota Med.* 93, 97. [492]

Observation on the results of roentgen therapy in chronic tonsillitis J W BARNCOCK *J. Am. M. Ass.* 923, 1922, 300. [493]

Tonsillectomy and its complications C F KIRBY *Am. J. Surg.* 923, xxxvi. [494]

The technique of the Sklar method for the removal of the tonsils W FOWLER *Grace Hosp. Bull. Detroit.* 1923, vi. [495]

Excision of tonsillar remnants after incomplete tonsillectomy J A GRAMENBERG *N. York M. J. & Med. Rec.* 923, cxvii, 22. [496]

Cysts of the buccal pharynx F A FREN *Laryngoscope*, 1923, xxxiii, 27. [497]

A case of strabopel wound of the larynx J ARKINSON *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 15. [498]

Warc surgery of the larynx, with special reference to the neck at Cape May G BERRY *Laryngoscope*, 923, xxxiii, 25. [499]

Two cases of pulmonary tuberculosis with laryngeal symptoms P FRANKLIN *Proc. Roy. Soc. Med. Lond.* 1923, xvi, Sect. Laryngol. 5. [500]

A case of chronic laryngitis of long standing C A S RIMOUZ *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 23. [501]

A case of dryotonic atrophica with implication of the left crico-arytenoid muscle H TILLEY *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 8. [502]

Two cases of laryngeal stenosis treated by translaryngeal fixation of a tube E SCHMIDTLOW *Hosp. Tid.* 923, lxxv, 23. [503]

A case of pachydermia laryngis H SIEHR *Laryngoscope*, 923, xxxiii. [504]

The removal of laryngeal papillomata with simple technique R MCKINNEY *Laryngoscope*, 923, xxxiii, etc. 923, xi, 7. [505]

Subcutaneous vulsion with oblique tomion of the larynx after burial A JURASS *Ztschr. f. Laryngol. Rhinol.* etc. 923, xi, 7. [506]

## Mouth

The technique of oral radiography C O SHERMAN *Internat. J. Orthodont. Oral Surg. & Radiography* 923, xi, 244. [507]

Malposed teeth their classification, pathology and treatment T BLUM *Internat. J. Orthodont. Oral Surg. & Radiography* 923, xi. [508]

Orthodontics the bearing of etiology on treatment H CHAPMAN *Internat. J. Orthodont. Oral Surg. & Radiography* 923, xi, 93. [509]

Non vital teeth and their relation to focal infection T C BROWN *J. Laryngol.* 923, xliii, 59. [510]

Can the medical and dental professions agree on any standardized treatment of the focus of infection? B C DARLING *J. Radiol.* 923, iv, 30. [511]

Submandibular salivary calculus B F BERRY *Ann. Surg.* 923, lxxvi, 776. [512]

Thyroid tumor from the base of the tongue H D TAYLOR *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 3. [513]

Cyst of the uvula T J F MILES *Proc. Roy. Soc. Med. Lond.* 923, xvi, Sect. Laryngol. 5. [514]



# INDEX TO SUBJECT MATTER

**ABDOMEN** Postoperative adhesions in, 73 anatomy and normal bending of nerves in all of, 70 relation of calcified glands of to urinary surgery 263, catheter after operations on, 79, hemorrhage following operations on, 316 and method of draining abscesses of, 330, gate to maintain permanent opening in 409 penetrating wounds of, 433 diagnosis of obscure chronic conditions of 434, segmental localization of pain through paravertebral cocaine injections as differential diagnostic method in diseases of 435 mesenteric tumors of, 435

**Abortion** Hemolytic streptococcosis following 39 bacteriology of fatal systemic infections following 360

**Abcess** Etiology of retropharyngeal, 3 subpharyngeal, 9 puncture of prevertebral, 244 descending from upper air passages, 264 safe method of draining intra-abdominal 330 papillomatous of cavity of, 3 See also names of organs and parts

**Acid case** Responsibility for payment of physician in, 46

**Acetabulum** Classification of, 36

**Actylis gastrica** Roentgenological aspects of 35

**Actinomyces** from surgical standpoint, 95

**Adhesions** Postoperative in abdominal cavity 73 typical operations in cases of severe, due to appendicitis 230

**Adipose** Extirpation of in epilepsy 225

**Adrenal** Intracardiac injections of, for resuscitation 303

**Adrenals** Acute insufficiency of, and death as result of treatment with high dosage roentgen rays, 300 has largest tumors of, 374

**Aspiration** Gritti, in neurasthenia medicine 225

**Ascaris** Transfusion of blood in posthemorrhagic 454

**Ascariasis** Alterations in blood after ether 8 new procedures of Glasse and Wyckoff for 74 cause of dark color of blood following too deep, 74 new technique for general spinal, 6 experiences in local and conduction, 6 conduction, in leg, 6 experiences in spinal, in urology, 163 dangers of lumbar 63 transverse nerve block, in surgery of pelvic floor and its tumors, 7 for prostatictomy 313 hypertonic glucose solutions as prophylactic against injurious effects of, 407 behavior of blood pressure and pulse during and after novocaine anesthesia 408 classical coarctation section under 473

**Ascites** Conservative treatment of false, 107 etiopathogenesis, pathologic anatomy physiopathology and surgical treatment of true 85 See also under Artery and Vein

**Aspirators** Cervical sympathetomy to stop pain of 32

**Asthenia** Operative measures to mobilize, 98

**Astrum of Highmore** Mithaps in puncture and irrigation of, 323, 400 carcinoma of 369

**Atresia** Calculea, 267

**Atresia** New method for surgical treatment of congenital vaginal, 44 imperforate, 23

**Aorta** Site of puncture wound of ascending 80

**Appendectomy** Hemorrhage following 3 6 inguinal hernia on right side following 3 7 abscesses opening in bladder by subperitoneal route after, 3 7

**Appendicitis** Safe subtotal extirpation of tip of appendix in cases of severe adhesions due to, 30 cases of cystic, 3 6 intestinal obstruction following acute, 3 6

**Appendix** Cancer in cervical stump with metastases in 16 safe subtotal extirpation of tip of in cases of severe adhesions due to 30

**Arm** Unusual foreign body in injuries of nerves of, 350 arteriovenous aneurysm of subclavian artery 118 reversal of circulation of 45

**Arteries** Transplantation of by Nagro's method 248 decortication of 440

**Arteriotomy** for embolism of villary artery 97

**Artery** Significance of aneurysms of tensor vessels indicated by aneurysm of stenose and aneurysm due to aortal bomb injury 4 arteriotomy for embolism of axillary trauma in rupture of femoral with hematoma 249 fibrosis of lung following ligation of pulmonary combined with phlebotomy and partial occlusion of pulmonary veins 304 fistula of femoral and aneurysm of origin of profunda 35 ligation of splenic 455 wounds of common carotid 454 aneurysm of subclavian and vein with reversal of circulation of arm, 455 See also Arteriosclerosis

**Ascariasis** Importance of in surgical practice, 7

**Ascaris** Lumbocostal in kidney tract 33 partial obstruction of pancreatic duct by 326 mechanical ascaris in antrum in intestinal obstruction due to, 428

**Astria** Topography of nerves of brachial plexus and vessels of, entrance into subclavicular space, 358

**BACK** Acute painful, among industrial employees after long compensable injury 33

**Bacteria** Reversive selective action of acid fuchsin on, 356

**Ble 1** Injury to cornea and conjunctiva due to fish, 20 in pancreatitis, 324

**Bile duct** Repair of principal or its implanation into gastro-intestinal tract in difficult cases, 21 obstruction of common and ascars due to solitary cyst of kidney 26 repair by end-to-end suture of injury to anast in cholecystectomy 320 congenital cyst of common, 3 3 method for permanent steric drainage of common, 324 abscess of cyst of common 43 importance of indirect roentgen findings in chronic infection of, and gall bladder 432

**Bile ducts** Congenital obliteration of and congenital biliary carbons of liver 3 primary closure of abdominal wall in operations on, 118 special consideration of simultaneous operations on stomach and duodenum 3 3

**Biliary tract** Technique of exposing 75 ascars lumbocostal 33

**Bladder** Pre-operative treatment of malignant tumors of by radium, 49 new procedure for formation of sphincter for 49 and results of operations for cancer of, 50 technique and statistics of treatment of carcinoma of by radium, 3 pathology and treatment of fibromyomatosis of urinary 21 operative treatment of incontinence of urinary 96 approved method of supporting, and vagina after vaginal hysterectomy for prostaticitis, 30 pyeloplasty opening into urinary cured by operation, 254 fistula involving uterus, vagina and, 33 chronic ulcer of 264 pathology of neck of, 264 residual suprapubic abscesses opening into, by subperitoneal route after removal of appendix, 3 7 epitheliomatous of of alantoid origin, 310 surgical removal of obstructions of neck of, with refer

- cure to Young punch, 380. anastomosed closed true anastomosis of posterior urethra and, 380. regenerative of resected urinary in rabbits, 381. findings in, in tuberculous of urinary tract, 470. treatment of cataplexy of, 480. stone removed from, by lithotomy, 481. treatment of epithelial tumors of urinary 481. application in treatment of affections of, 481. cystic calculi in, 481. *See also* under Urinary Tract.
- Blood. Alterations in, after transfusion of, 8. cause of dark color of, in too deep incision, 74. simple procedure for testing circulation of, in gangrene of extremities, 107. changes in, occurring in course of single day of ether use, 147. action of ether on circulation of, in true anastomosis, 189. changes in physico-chemical structure of plasma of, with accelerated sedimentation of cells of, following treatment with irritants, surgical operations and diseases, 152. sources of error in group tests of, and criteria of reliability in investigations on heredity of groups of, 30. sugar in, during pregnancy and puerperium, 366. sugar test of, in pregnancy, 366. diabetes in, and same as measure of renal efficiency, 374. existence of more than four monogamous groups in humans, 451. influence of coagulation on concentration of, 453. transfusion of, in acute posthemorrhagic anemia, 454. intraperitoneal transfusion with citrated, 454. effect of serum secretion on coagulation of, 462.
- Blood pressure. Behavior of, and pulse during and after novocaine adrenalin anesthesia, 408. theoretical bases and practical application of estimations of, in surgical operations, 411.
- Blood vessels. Functional transformation of, 455. treatment of defects of walls of, by application of rubber protective coverings, 455.
- Bone. Tumors of, 334-436. perosteal sarcoma in association with osteomyelitis, 93. transplantation of, 99. malignant tumor of temporal, 63. diagnosis and treatment of lesions of, 330. traumatic new formation of, 33. myxomatous lesions and perosteal cysts of, 35. cysts of, 33. disease of, from fixation and non use, 31. metastasis to lungs from pure myxoma of, 315. grafting of, 34. certain factors causing deposition of bone salts in, 436. plugging of cavities in, with live tissue plants of fat, 444. cystic carcinoma of, as compared with sarcomatous form, 451. parathyroid hyperplasia and destruction of, in generalized carcinomatosis, 45. *See also* under Bones and bone diseases.
- Bones. Roentgen diagnosis of more important tumors of long, 34. primary multiple sarcomas of, 93. operation for lengthening, 99. temporary plating of fractures of long, 336.
- Branchial plexus. Topography of nerves of and auxiliary vessels at entrance into subclavicular space, 338.
- Brachyelectrolyte. Due to congenital shortening of ureters, 336.
- Brain. Operation for total extirpation of tumors in cerebral hemisphere, angle of, X ray diagnosis of diseases of, following spinal air injections, 38. effect of radiation on normal tissue of, of dogs and its therapeutic application, 39. surgical operations on gunshot wounds of skull and, during war, 741. abscess of, of unusual etiology, 76. histogenesis of hypophyseal type and Argyll Robertson sign associated with tumor of thalamic ventricle of, 76. injuries of visual tracts of, 75. abscess of, 164. unusual plicity of symptoms in some cases of tumors of posterior cerebellar angle of, 164. occular sarcoma involving, and spinal cord, 200. hemioptic and heteroplasmic tumor grafts in, 218. fatal compressive hemorrhages in long and, due to excessive bodily exertion, 21. inflammation of, in rabbits due to herpes, 290. parasitology and pathological anatomy of, cysticercosis of, 40. regeneration of neocortex of, 410. leukoencephalitis of, in apparently healthy adolescents and children, 420. unexcited pressure on, with fat embolism, 421.
- Breast. End results of operations for cancer of, 347. tuberculous of, 3 tumors of, 80, 109. influence of phlebotomy on, 57. bleeding of, 66. effect of radiation with regard to postoperative recurrence of carcinoma of, 67. treatment of recurrent inoperable carcinoma of, by radium and roentgen ray, 67. fibro-sarcoma of, in male, pregnancy after operation for cancer of, 77. freedom from local recurrence following chemical removal of advanced carcinomas, 300. result and technique in treatment of carcinoma of, by radiotherapy, 30. tumors of arising during pregnancy and lactation, 368. supraductal extension of operations for malignant disease of, 417. local recurrence following extirpation of carcinoma of, 418. clinical cure of recurrence of carcinoma of, lasting more than five years after treatment with roentgen ray, 418.
- Breath. Stricture, larynx of spinal cord in, as cause of fatal death and paraplegia in childhood, 37.
- Bronchectasis. Location of pulmonary lip metastases in conservative treatment of advanced lung abscess in, 11. 302. graded thoracoplasty in diffuse, 168.
- Burns. Pharyngeal. Cysts of, 49.
- CACITEXIA. Picture of hypophyseal, 39.
- Carcinoma section. Uterus after, 30. test of labor in relation to, 58. indications for, and technique of, 59. for delivery of pregnant right side of double uterus, 370. once a, always a, an embryo, 371. chemical control local anesthesia with temporary fixation of uterus, 473.
- Calcaneus. Breaking off of, tuberculous of, 290.
- Cancer. End results in, as influenced by type, reaction, location, and age, 33. diagnosis of, by means of serum reactions, 56. elective fixation of rubrom-collodal substances on embryonic and neoplastic cells and its importance in diagnosis and treatment of, 371. function of connective tissue in experimental production of cancer, 457. *See also* Carcinoma, Malignancy and names of organs and parts.
- Carcinoma. Cystic osteoplastic, as compared with sarcomatous form, 45. parathyroid hyperplasia and bone destruction in generalized, 45. roentgen, 450. *See also* Cancer, Malignancy and names of organs and parts.
- Carcinomatosis. Parathyroid hyperplasia and bone destruction in generalized, 45. *See also* Cancer, Carcinoma, and Malignancy.
- Castration of male by X ray, 313.
- Cataract. Denudation to lens protein before operation for, 55. new method of preserving lens in operation for extraction of, with iridectomy, 370. factor influencing choice of method for extraction of, 386.
- Catheter after abdominal operations, 189.
- Catheterization. Studies on ureters, 49.
- Cephalocle, Occipital, 70. subnasal, 36.
- Cerebellopontine angle. Total extirpation of tumors in, 9. unusual plicity of symptoms in some cases of tumors of, 164.
- Cerebrum. Hemorrhages of, in apparently healthy adolescents and children, 420. *See also* under Brain.
- Cerebrum. Hemorrhages of, in apparently healthy adolescents and children, 420. *See also* under Brain.
- Cervical ribs, 244.
- Cheek. Flap, on, with tubed, temporal pedicled forehead flaps, 303. rotation of, 4. 2. principles involved in operations for carcinomas of, and results obtained, 4. 2. 4.

- Clot, Tension of, right, 300 gate to maintain perma-  
nent opening in, 400
- Clin. Muscles on, with tubed, temporal pedicled forehead  
flaps, 293
- Closed disk, Decompression for, 64
- Cholangitis, cholelithiasis, cholecystitis, and, 330
- Cholecystectomy And associated pathology of gall bladder  
disease 24 operative injury to main bile duct in  
330
- Cholecystenterostomy from experimental standpoint, 90
- Cholesteroma, Cystic, 74 chronic catarrhal, with lipoid  
deposit 33, cholelithiasis, cholangitis and 330
- Cholelithiasis, Admissibility of early operation in, 5 drug  
treatment of, 175 cholecystitis, cholangitis  
and, 330 operative injury to main bile duct in cho-  
lecystectomy for 330
- Cholelithotomy, Ideal, 3
- Chorio-epithelio-endo-sarcoma Transplantable meta-  
stasis of rat, 35
- Chorionepithelioma Malignant with hemorrhage into  
abdominal cavity 45 frequency and treatment of  
464
- Choroidoscopy, Accurate 267
- Circulation Simple procedure for testing in gangrene of  
extremities, 97 action of ether on in traumatic  
shock, 270 arterial occlusion occlusion of vessel via as-  
tery with reversal of, rat, 455
- Clinic Retrosternal dislocation of, 9
- Cleft palate, types and operative treatment of harelip  
and 77 burp and 9 typical plastic operations  
for 30
- Coarctation Perforation of nasal septum in children of 450
- Celitis Chronic ulcerative and its treatment 479
- Cancer, Phases of proximal portion of (from classic surgical  
standpoint), extirpation of transverse, the ca-  
cematous stomach treatment of acute obstruc-  
tion by cancer of 71 treatment of non malignant  
affections of 73 7 pre-operative and post-  
operative treatment of malignancy of 90 patho-  
genic phases of right, 4 8 indications for anchoring  
head of, and results 479 See also Gastro Intestinal  
Tract and Intestine
- Calistany Value of temporary
- Congestion Fetal hemorrhages in lung and cerebral  
nervous system due to momentary bodily exertion and  
their relationship to Perthes pressure
- Conjunctiva, Injury to cornea and attributed to fish bile  
but due to lead acetate 30 prophylaxis of 585
- Cornea Early development of cataract of 36 injury to  
and conjunctiva attributed to fish bile but due to lead  
acetate, 30
- Corpus luteum Influence of on ovarian and luteal  
cycle, 5
- Corn, plaque and tuberculous osteitis of neck of femur 490
- Carcinoma Use of as test of renal function, 476
- Cranial ligaments, Injuries to and tibial spine 22
- Cranial operations in gastro intestinal surgery 6
- Cryptorchidism, Operation for 5 congenital defect of  
anterior abdominal wall and, 266 clinical aspect and  
treatment of, 266
- Cystic calculi, Case of coal pile 485
- Cystocoele, Treatment of 364
- Cysts, Form of pelvic hydatid and treatment, 44 retro-  
peritoneal, 435 See also names of organs and parts
- DACTYLOCYSTITIS suppurative ethmoiditis compli-  
cated by orbital cellulitis and acute suppurative 28
- Deformities Correction of of long standing, 342
- Deflated muscle, Method of facilitating plastic operations  
on, 443
- Diabetes I jury as cause of, impudus with bitemporal  
hemianopsia 260, clinical experience with insulin in  
treatment of mellitus, 356
- Diaphragm Above below 9 immobility of 308  
phrenic nerve and observation of 358 cause and  
effects of immobility of 4 pneumoperitoneum  
and its diagnosis of conditions beneath 435
- Dialthermy Treatment by 3 7
- Disease Remark on etiology of Schil (ter 37 Albert  
Schoenberg 333 pathology of Paget 433 place of  
operation for spinal fixation in treatment of Pott  
448 operation as part of conservative treatment of  
Pott 340 osteomyelitis in Pott 340 changes in  
physicochemical structure of blood plasma with ac-  
celerated sedimentation of blood cells following 3
- Diphtheria Unilateral 374
- In eritricum Acute intestinal obstruction caused by  
fecal impaction in Meckel 3 5
- Dougherty Cryo-omen 4
- Drainage Safe method of for abdominal abscesses 350
- Duodenal Ulcer of stomach and 83 ulcer of stomach  
and and cancer 84 histology and healing of ulcer of  
stomach and 84 peptic ulcer in 24 surgery of  
membranes of obstruction of in infants 26  
pathologic relationship between ulcerative processes  
in stomach and and epigastric hernia 3 surgery of  
ulcers of and stomach which have perforated into  
abdominal cavity 3 treatment of simple perfor-  
ation of ulcers of stomach and, 3 diagnosis of  
chronic ulcer of stomach and 3 5 chronic obstruc-  
tion of 3 4 primary closure of abdominal wall in  
operations on biliary ducts with spontaneous ope-  
ration on stomach and 3 3 problems of ulcers of  
stomach and 423 See also Gastro Intestinal Tract  
and Intestine
- Dyslexia Repeated from fetal anomaly is successive prog-  
resses 37
- EAR Correction of protrusion 27 unprovoked artificial  
drain for 386 atypical type of temperature not refer-  
able to in acute suppurative, otitis media 387 oper-  
ative correction of defects of, by epithelial relay 488  
acute diseases of, in children, 488
- Echymosis Results of treatment of, by Dobbin method  
9, true and renal 469 new treatment of, 470
- Elbow Trans-osseous route for reduction of old dis-  
locations of 76 arthroplasty of 24 sprains of 457
- Electrocoagulation in cancer of lip,
- Embolism Air, following various diagnostic or therapeutic  
procedures in diseases of pleura and lung 14 pul-  
monary fat 68 increased cerebral pressure with fat  
4
- Empyema 45 infection in mediastinum in fulminating  
recent progress in treatment of chronic 290  
unusual case of 290 chronic 4 6
- Endocervicitis, Treatment of chronic 465
- Epididymectomy by Starnack method as means of re-  
juvenation in old age and other conditions 38
- Epididymis Cysts of, 68
- Epilepsy Extirpation of adrenal in, 245
- Ergot Action of and solution of hypophysis on terms  
80
- Ether Action of on circulation in traumatic shock, 80  
bactericidal and inhibitory power of, in peritonitis 4  
Ethmoid, Total blindness cured by operation on, and open-  
ing of ethmoid sinus, 27 carcinoma of 400
- Ethmoiditis Suppurative, complicated by orbital cellulitis  
and acute suppurative dacryocystitis 28
- Ferric, Changes in blood occurring in simple day of 247
- Esophagolysis, Polishing, 486

- E.** Unusual tumor of orbit of 54, localization and extraction of foreign bodies in, 54 cysticercosis of 50, suppurative ethmoiditis complicated by orbital abscess of orbit of, and acute suppurative dacryocystitis 8 growths of orbit of, 99 relation of affection of due to nasal conditions, 99, carcinoma of involving bone and spinal cord, 300, therapeutic use of nasal pigment in sympathetic inflammations of, 300 focal infection in tumor causing tuberculous of, 300 sporadicities of, 300 diagnostic and therapeutic use of nasal pigment in myriasis of nasal tract and sympathetic inflammation of 306 total blindness cured by skinned operation and opening of sphenoid sinus, 31 sphenoidal thyroid tumor in orbit of, 385 etiology of sympathetic inflammation of 385 foreign body in 436 nodular tumors of 487 method of recording alterations of chyl. of, and study of growth of normal and abnormal disk cups, 487. *See also* names of parts and diseases

**FACE.** Plastic surgery of del. ynd pedicle flap in plastic surgery of 63

**Fallopian tube.** Results of surgical treatment of long-standing tumors of 43 suppurative in, opening into urinary bladder 5

**Femur.** Deformity of head of obstacle to complete cure of congenital dislocation of hip 39 necrosis of proximal fragment in fracture of neck of, and its significance with regard to hip joint, 76 operative treatment of subcapital fracture of neck of 76 hip fracture of great trochanter 30 osteomyelitis operation for fracture of neck of, 35, fracture of, 34 carcinoma and tuberculous osteitis of neck of, 439

**Fetus.** Repeated dystocia in successive pregnancies due to anomaly of, 371 external stress in, during labor 371 injury of spinal cord in breech extraction as important cause of death of, and purpura in childhood 372, some obstetrical problems involved in stillbirth and death of, 37 re-occlusion of fetal membranes and deformities with placenta previa 473

**Fibula.** Hereditary symmetrical osteitis of 44

**Flap.** Microsurgical plastic for contractures of, 446

**Flatfoot.** Relation of acute arthritis to, 377

**Foot.** Subtarsalgia dislocation of 390, report of commission appointed by American Orthopedic Association for study of stabilizing operations on 346 spurs of, 437 operations for deformities of 446

**Furuncle ovale.** Patient, 9

**Fractures.** Results of operative treatment of untreated, due to war injuries, 95 peripheral nerve injuries associated with, 3, alleged malpractice in treatment of 84 treatment of scapula, 37 osteomyelitis with eleven, 33 routine treatment of, by operative methods 333 temporary plating of, of long bones 334, treatment of, associated by bridge grafts, 337 treatment of scapula, 339. *See also* names of bones

**Frostbite.** Treatment of with acetates 353

**Fuchsin.** Reverse selective bacteriostatic action of acid 356

**GALL-BLADDER.** Associated pathology of disease of 24, bacteriology of, 30 morphological study of pathology, 300 connective tissue changes in, 233, torsion of, 33 studies in pathology of 319 surgical considerations of 31 disease of 432 relation of disease of, to secretory function of stomach and pancreas, 432 importance of indirect roentgen findings in chronic infection of biliary ducts and 43 surgical treatment of disease of 432. *See also* names of gall bladder diseases and operations

**Gall stones.** Etiology of 312

**Gastric.** Simple procedure for testing circulation in of esophagus 97

**Gastric antrum.** Preservation of motor root of in division of sensory root for trifacial neuritis.

**Gastro-enterostomy.** Effect of on gastric function as interpreted by fractional test meal, 415, roentgenological investigations on functional behavior of stomach in various types of posterior enteric, and comparison of its value in ulcer of stomach and duodenum, 416

**Gastro-intestinal tract.** Crushing operations in surgery of, 38, intraperitoneal insertion of heated capillary glass tubes of medium constriction in tumor of, 349. *See also* names of parts of gastro-intestinal tract, diseases, and operations

**Gastrostomy.** Simple treatment of 413

**Gastric.** Thoracic abdominal, 409

**Gastritis.** Tuberculous, treated with radium, 372

**Glands.** Chronic suppurative of parotid, no relation of calcified abdominal, to urinary surgery 305, tuberculous of salivary 372 tuberculous of of neck and spinal accessory paralysis, 305. *See also* names of glands

**Glascoma.** Etiology and treatment, 37 masts and halo of, 36

**Glossitis.** Hypertrophic, as prophylactic against injurious effects of operation and anesthesia 407

**Glossitis.** Transplantation of tumor tissue from in cases of calcified, 343

**Gorrie.** Drapage net, 70, clinical experience in operation for with consideration of recurrence and operations for recurrence 365 recurrence of 66 treatment 370, histologic study of effect of ligation of thyroid vessel in esophagus, 366 Gorrie's test and radiotherapy in, 367, hypopharynx in esophagus 4, 4, method and technique of operation for 4 5

**Gorrie's operation.** In insurance medicine 243

**HENITARIA.** Uteral structure as etiological factor in so-called essential, 61

**Hemorrhage.** Diagnosis and treatment of intracranial in newborn, 30, following abdominal operations, 316 in newly born, 372, transfusion of blood in acute anemia due to, 454

**Head.** Rigidity of, 439 partial endocranial resection in spastic contractures of in infantile hemiplegia 443

**Head.** Operative treatment of complete double, 77 types and operative treatment of, and cleft palate, 77 and cleft palate 9 typical operations for 9

**Heart.** Surgery of 3 307 pulling rupture of, and its mechanism, 3, hydatid cysts of, 30 injections of adrenalin into for resuscitation 305

**Hematomas.** Injury as cause of diabetes insipidus with bilateral 369

**Hepatic duct.** Efficiency of Kahr drainage of, 31

**Hepatoduodenostomy.** for stricture of bile duct, 330

**Hernia.** Non traumatic diaphragmatic, 8 medical operation for femoral, with aid of active muscular closure 70 relation of epigastric, to gastric ulcer 308 radical operation for inguinal and femoral, with plastic use of uterus through abdominal cavity and small incision laparotomy for another condition, 71, operative treatment of difficult, 71 gangrenous perforation of stomach complicating diaphragmatic 7, anatomy and identity of encysted and indurated, 73 for operation upon by combined route 54, open abdominal treatment of umbilical, 309 pathological relationship between ulcerative processes in stomach and duodenum and epigastric, 3 inguinal, on right side following appendectomy 3 7

- Hexamethylene tetramine, Action of, 374
- Hip, Traumatic dislocation of, in child, 8 surgical treatment of habitual dislocation of, 19 deformity of head of femur as obstacle to complete cure of congenital dislocation of, 19, Davis method of reducing congenital dislocation of, 66, necrosis of proximal fragment in fracture of neck of femur and its importance with regard to, 176 Calvé-Legg Perthes disease of, 36, congenital subluxation of, 38 incomplete epiphyseal fractures at, 30, treatment of congenital dislocation of, 34 limited fracture of acetabulum in luxation of, 34 and result in severe destructive injury to 344
- Lorenz infarction operation for dislocation of 443
- New method of treating irreducible acquired or congenital dislocation of, 443, treatment of old congenital dislocation of, 443
- Humerus, Fracture separation of in ex epiphyseal of 8 operative treatment of supracondylar fractures of 37 solitary cyst in, 335 fracture dislocations of head of, 340 operative treatment of supracondylar fracture of, in children 435
- Hydatid mole, Frequency and treatment of, 464
- Hydrocephalus, Ventriculography and intra ventricular photography in internal 4
- Hydrophorosis, Histologic lesions of experimental aseptic, 91, treatment of, caused by abnormal renal vessels, 378 experimental and significance of compensatory hypertrophy and dense atrophy of repair 476
- Hypertonia, Intermittent asphyxia in gynecology 44
- Hypochlorhydria, Mechanisms of 309
- Hypoplasia in epiphyseal plate 4 4
- Hypophyria, Infarction due to insufficiency of associated with tumor of the lumbar part of third vertebra 76 action of ergot and solution of, on terms, 89 extract of in reduction of labor 37 picture of carcinoma due to insufficiency of 29
- Hysterectomy Improved method of supporting bladder and vagina after vaginal, 60 procedure, 50
- Hysteromyometomy Evolution of 6
- LEDS during pregnancy 9 as aspects of ventrofixation of uterus, 463
- Ischiatic paralysis, Surgery in, 24 correction of deformities of long standing due to, 343
- Infarction of hypophyseal type and Argyll Robertson sign associated with tumor of thalamic part of third ventricle, 76
- Infection Foci in intestines, 88 significance of lymphatic involvement in, 354, agreement of medical and dental professions on standardized treatment of focus of, 493 See also names of organs and parts
- Lary Myoma and, 6 acute painful back among industrial employees alleging compensable 53
- Likelihood Tumor necrosis due to 450
- Linsell, Clinical experience with, in treatment of diabetes mellitus, 356
- Lithotomy, Foreign bodies in, rare diagnostic error 30 preventing wound of perineum with puncture of, 30 primary sarcoma of 30 aseptic method for anastomosis of, 217 aseptic technique for resection of 3 postoperative obstruction of small, 3 4 end to-end anastomosis of, 3 7 See also names of parts of urogenital system, and operations
- Lithotomy, Tetanus bacillus as saprophyte in 53 importance and reduction of demerol of endometrial type 43 acute to chronic hematoma of endometrial type 43 acute obstruction of, in infancy and childhood, 87 foci of infection in, 88 acute obstruction of 83 treatment of acute obstruction of, due to cancer of colon, 77 acute obstruction of caused by fecal impaction in Meckel diverticulum, 3 5 obstruction of following acute appendicitis and peritonitis, 3 6 etiology of acute intonation from, in infants, 4 8 injuries to mucosa of caused by ascariasis 438
- Intestine Acute intestinal, in infants, 438
- Iodine, Surgical importance of adenosyncrasy to, and poisoning due to, 407
- Irradiation measurements, 360
- JAWS, Treatment of cancer of reconstruction of arch of lower by autophagy 76 atypical operations on, and mouth for malignant growths, 3 general principles involved in operations for carcinoma of result obtained 4 Cleveland Clinic, 4 4
- Jejunum Formation of peptic ulcer in, 9 See also under Intestine
- Joints, Pathology of tuberculosis of, 93 operative measures to mobilize ankyloses, 98 chronic diseases of other than mycotic and neuropathic conditions, 35 facts and theories explaining spontaneous origin of, since 36 sprains of large of extremities, 436 See also names of joints, diseases, and operations
- KELLOID, Radium treatment of 36
- Keratitis Influence of trauma upon onset of interstitial 55 neuropathic caused by focal infection, 7
- Kidney New method for roentgenological exploration of, 89 pathological complications with duplication of pelvis of and ureter 47 studies on ureteral catheterization of 40 malignant papilloma of (traumatic subcutaneous rupture of 9 surgery of nephrosis, 9 cysts, 93 diagnosis of small concretions in pelvis of, and ureter 91 carcinoma in ureteropelvic junction of metastatic from prostate, 93 nature and significance of scars of 360 double and double ureter 360 recurrent calculi in, 36 obstruction of common bile duct and azotemia due to solitary cyst of 36 partially transperitoneal and partially extraperitoneal operation on 36 azotemia due to calculi in, 367 diagnosis in blood and urine as measure of efficiency of 374, diabetes of one, 374 substitution of oxygen around 375 tumors of, 375, calculi of, 376 color of associated with ureteral conditions in women, 376 diagnosis and surgical treatment of accessory 376 tumors of, 378 clinical picture of chronic inflammatory diseases of coverings of, 378 true edema and edema of, 469 aches and pains originating in, 474 use of creatinin as test of function of, 476 gonococcal infection of 476 hitherto unrecognized mode of origin of congenital cysts of, 477 polycystic, 477 echinococcus disease of 477 leucoplakia of pelvis of 477, diagnosis and treatment of malignant tumors of 478, conservative surgery of associated with ureteral structure 479 See also Urinary Tract and names of kidney diseases and operations
- Knee J injuries to crucial ligaments of and vision of tibial space, 420 new approach to semilunar cartilages of 443 wounds of, 443 chronic non-inflammatory lesions of 436 efficient treatment of acute and chronic, simple traumatic synovitis of, by repeated aspiration and immediate active mobilization without splinting, 344 lesions of and their operative treatment, 344 sprains of 437 aneurysm of capsule of 439 so-called osteochondritis dissecans of, 440, pathology and diagnosis of injuries of meniscus of, 441 peri articular fixation of 446
- LABOR, Immediate repair of lacerations due to vertex delivery 9 retroversion of uterus following, 30 action of ergot and solution of hypophyria on terms in,



**Lye** Unusual tumor of orbit of, 54. Infection and extraction of foreign bodies in, 54. Cysticercosis of, 26. Suppurative ethmoiditis complicated by cellulitis of orbit of and acute suppurative dacryocystitis, 12. Growth of orbit of, 99. Relation of affection of dose to usual conditions, 99. Success of, an living brain and spinal cord, 200; therapeutic use of aural purulent in sympathetic inflammation of, 200. Local infection in tooth causing tuberculous of, 200. Sporotrichosis of 200, diagnostic and therapeutic use of aural purulent in injuries of aural tract and sympathetic inflammation of, 269; total blindness cured by aural operation and opening of sphenoid sinus, 77; metastatic thy read tumor in orbit of 335. Etiology of sympathetic inflammation of, 383. Foreign body in, 436. Industrial injuries of, 437. Method of recording alterations of disk of, and study of growth of normal and abnormal chak cups, 437. See also names of parts and diseases.

**FACE** Plastic surgery of. del 3rd pedicle flap in plastic surgery of, 45.  
**Fallopian tube** Results of surgical treatment of long-standing tumors of, 41. Suppuration in, opening into urinary bladder, 5.  
**Finger** Deformity of hand of, as obstacle to complete cure of congenital dislocation of hip, 29. Proximal of proximal dislocation in fracture of neck of and its sequelae with regard to hip joint, 76. Operative treatment of subcapital fractures of neck of, 76. Late results of great trochanter, 95. Immediate operation for fracture of neck of, 99. Fracture of, 34. Comp. plana and tuberculous osteitis of neck of, 439.  
**Fetus** Repeated dystocia in successive pregnancies due to anomaly of, 27. Cerebral stress in, during labor, 37. Injury of spinal cord in breech extraction in important cause of death of and paraplegia in childhood, 37. Some obstetrical problems involved in stillbirth and death of, 77. Association of fetal malformations and deformities with placenta previa, 473.  
**Fibula** Hereditary symmetrical osteitis of, 44.  
**Finger** Morel's plastic for contractures of, 446.  
**Phthor** Relation of acute neuritis to, 337.  
**Foot** Subtarsal dislocation of, 240. Report of case mission appointed by American Orthopedic Association for study of stabilizing operations on, 369. Sprains of, 437. Operations for deformities of, 446.  
**Fornix ovalis**, Falter, 9.  
**Fracture** Results of operative treatment of osseous, due to war injuries, 95. Peripheral nerve lacerations associated with, 703. Aligned malpractice in treatment of, 84; treatment of maxilla, 37. Osteomyelitis with chronic, 33. Routine treatment of by operative methods, 333. Temporary plating of, of long bones, 335. Treatment of scapula, by bridge grafts, 330. Treatment of maxilla, 330. See also names of bones.  
**Frontitis** Treatment of with foreign body, 95.  
**Gachon** Reverse selective bacteriostatic action of acid, 156.

**GALL-BLADDER** Associated pathology of disease of, 24. Bacteriology of, 26. Roentgenological study of pathology, 100. Connective tissue changes in, 32. Tumor of, 13. Studies in pathology of, 3 p. Surgical considerations of, 3. Disease of, 413. Relation of disease of, to secretory function of stomach and pancreas, 43. Importance of indirect foreign findings in chronic infection of biliary ducts and 43. Surgical treatment of disease of, 413. See also names of gall bladder diseases and operations.

**Gall stones** Etiology of, 3.  
**Gangrene** Simple procedure for testing circulation in, of extremities, 97.  
**Gastrosplen** gastrosplen, Preservation of motor root of 14. Division of sensory root for trilateral anesthesia, 10.  
**Gastro-enterostomy** Effect of on gastric function as interpreted by fractional test meal, 435. Roentgenological investigations on functional behavior of stomach in various types of posterior retrocolic and comparison of its value in ulcer of stomach and duodenum, 436.  
**Gastro-intestinal tract** Circulating operations in surgery of, 1. Intropentical insertion of beaded capillary glass tubes of radium emanation in tumor of, 220. See also names of parts of gastro-intestinal tract, diseases, and operations.  
**Gastrophores** Surgical treatment of, 433.  
**Gaze**, fibrous abdominal, 209.  
**Gastritis** Tuberculosis, treated with radium, 27.  
**Glands** Chronic suppuration of parotid, 0. Relation of calcified abdominal, to urinary surgery, 266. Tuberculosis of salivary, 73. Tuberculosis of neck and spinal accessory paralysis, 295. See also names of glands.  
**Gleason** Etiology and treatment, 27. Tests and value of, 36.  
**Gleason** solutions, Hypertonic, as prophylactic against anesthetic effects of operation and anesthesia, 427.  
**Gleason** medicine, Transplantation of tumor from kidney in cases of, cultured, 343.  
**Gleason** Desperate risk, 70. Clinical experience in operations for with co-ordination of treatment and operations for recurrence, 45. Recurrence of 66. Malpractice, 120. Histologic study of effect of ligation of thyroid vessels in esophagus, 266. Gorkack test and radiology, 26, 267. Hypertonicity in esophagus, 414. Method and technique of operation for, 43.  
**Gleason** aspiration in trachea medicine, 443.

**HAEMATURIA** Urinary structure as etiological factor in so-called essential, 91.  
**Hemorrhage** Diagnosis and treatment of intracranial in newborn, 30. Following abdominal operations, 316. In newly born, 373. Transfusion of blood in acute anemic diet, 431.  
**Head** Rigidity of, 430. Partial endoneural resection in spastic contractures of in infantile hemiplegia, 415.  
**Hemiplegia** Operative treatment of complete double, 77. Types and operative treatment of, and cleft palate, 77. and cleft palate, 9. Atypical operations for, 29.  
**Heart** Surgery of, 3. 307. Poling rupture of, and its mechanism, 5. Hydrated cysts of, 80. Injections of adrenalin into for resuscitation, 205.  
**Hemianopia**, 1. Injury in cancer of diabetes complicating with bilateral, 269.  
**Hepatic duct** Efficiency of Kehr drainage of, 3.  
**Hepatoduodenostomy** for stricture of bile duct, 320.  
**Hernia** Non traumatic diaphragmatic, 2. Radical operation for femoral with aid of active muscular closure, 70. Relation of epigastric, to gastric ulcer of and total operation for inguinal and femoral, with plastic use of uterus through abdominal cavity and small intestine laparotomy for another condition, 71. Operative treatment of difficult, 7. Gangrenous protrusion of stomach complicating diaphragmatic, 7. Anatomy and identity of cystic<sup>h</sup> and infundibular, 273. In, for operated upon by combined route, 54. Operative treatment of umbilical, 209. Pathological relationship between ulcerative processes in stomach and duodenum and epigastric, 30. Inguinal on right side following appendectomy, 37.

flap, 337 anatomical, experimental and clinical investigations concerning phrenic, and innervation of diaphragm 358 lesions of paratracheal area, 4 2

Nerves, Methods for bridging defects in, and new method of autotransplant, 3 technique and results of resection of, stomach, 3 injuries of peripheral, associated with fractures, 97 experimental results of cable grafts and tubes of fascia lata in repair of peripheral 94 solitary fibrosarcomata of trunks of peripheral 94 pulvinate contractility of motor following parental injection of heterogenous serum, 96 anatomy and surgical bearing of in abdominal wall 70 backward deviation of seventh cervical vertebra with whitened compression of roots of 77 electrical method in diagnosis and prognosis of paralysis due to lesions of peripheral, 80 re suture of peripheral, 8 technique of suture of 146 surgery of sympathetic 350 injuries of arm, 35 resection of roots of spinal 390 topography of, of brachial plexus and villary vessels entrance into subclavicular space, 355 transplantation of roots of spinal flaccid paralysis 448 ca crurae aspoints in peripheral 450 in lateral resection of posterior for vulval pruritus 467

Nervous. Preservation of motor root of sacral nerve ganglion in division of sensory root for trifacial due to lesions of paratracheal res, 4

Nervous. Diagnosis and treatment of paratracheal hemorrhage in 20 hemorrhage in 373

No head touch technique, 79

Nodes 450

Nose. Cephalocele in, 56 relation of orbital affections due to conditions in, 60 metal rails and robber's splint drawings in plastics on 7 plastic operations on with infected temporal pedicled forehead flaps 293 injection of alcohol in treatment of hypertrophic rhinitis and newness originating in 383 correction of external deformities of by intranasal root 558 perforation of septum of in cocaine suffers 459 rare chondroma of 489 osteoma of accessory sinuses of 492

Nucleus. Segmental localization of pain through paravertebral injections of as differential diagnostic method in intra-abdominal disease 435

OBSTETRICS Problems of zivil 3 in stillbirths and death of newborn infants 37

Oesophagus. Carcinoma of thoracic 6 combined transpleural and transperitoneal resection of thoracic 160 curia for carcinoma 16 plastic repair of from stomach, 16 symptoms, perforation of revealed by sigmoidoscopy, 69 carcinoma of allicula epistomica and, congenital trachea of with fistula into trachea 306 surgical treatment of 306 surgery of mediastinum including heart and 307 treatment of cancer of with radium 430

Omentum. Torsion of great, 379 pathogenesis of torsion of 42

Ovary of long duration, 26

Operations. Adhesions in abdominal cavity following 73 improvement in cure before and after 73 typical in cases of severe adhesions due to pyelitis 70 administration of catheter after abdominal 80 etiology of pulmonary complications following 90 hemorrhage following abdominal, 3 6 changes in physicochemical structure of blood plasma, 116 accelerated sedimentation of blood cells following surgical, 35 Stomach as means of rejuvenation in old age and other conditions such as impotence and depression, 38 hypertonic glucose solutions as prophylactic against injurious effects of, and anesthesia,

407 Morestin for contractures of fingers, 446

Lorain bifurcation 443, theoretical bases and practical application of blood pressure estimations in, 455

See also names of operations, organs, and parts

Ophthalmia Uveal pigment in sympathetic 300 focal infection in tarsal causing tuberculous 200 drug astasia and therapeutic use of uveal pigment in injuries of uveal tract and sympathetic 309 etiology of sympathetic 353

Organs. Paralysis and transplantation of 97

Orthodontia Physiological principles in, 90

Osteitis Hereditary symmetrical of lo or limbs 44

Osteitis deformans Pathology of 333 in meninges 334

Osteitis fibrosa Pol cystic areas of 33

Osteochondritis deformans crura juvenalis 36 course and results and familial occurrence of 36 is resolution 36

Osteochondritis dissecans 334

Osteoid 95 erous osteotomy 97

Osteoma ethis Chronic non suppurative in adult 14 primary total necrosis of diaphragm 97 hemorrhagic 9 perovital sarcoma associated with 93 treatment of acute 9 perovital form of tumor like 75 use of large Res idin grafts in healing of chronic 224 suppurative due to colon bacillus 334 See also names of bones

Osteoporosis from fixation and non use, 13

Osteoparathrosis with eleven fractures, 33

Osteosclerosis (congenital) 333 fragilis generalisata 333

Osteotomy emmet osteoclasia 97

Otitis media Septic type of temperature not referable to ear in acute suppurative, 387

Ovary Adenomyoma of retrocervical space associated with cysts arising in islands of adenomyomatous tissue in, 43 importance and relation of intestinal adenomyoma of endometrial type 1 kermatoma of of endometrial type, 43 results of surgical treatment of long standing tumors of, 43 clinical results of grafting of 7 endometriosis and endometriomyoma of 7 kermatoma of of endometrial type, 66 subclavicular of 83 fibrosis and sarcoma of 33 status tox of carcinoma of 35 fibromata of, 467 explanation of axal torsion of 468

Ovary. Influence of, on ovaries and uterine cycle 5

PAIN Segmental localization of through paravertebral novocaine injections 435

Palate. Congenital malformations of and lip type and operative treatment of harelip and cleft 77 hare lip and cleft 219 typical plastic operations for congenital fissures of lip and 29

Pancreas Multiple calculi in 3 preliminary stages of secret necrosis of, 3 large cyst of 9 cyst of, excised, 324 studies on function of, 34 total resection of 326 diagnosis and treatment of primary carcinoma of, particularly of body and tail, 3 7, clinical experience with extract of in treatment of diabetes mellitus, 356 relation of disease of gall bladder to secretory function of stomach and, 43

Pancreatic duct. Partial obstruction of, by round worm, 326 acute hemorrhagic pancreatitis due to round worm in 326

Pancreatitis, Toxic, 90 bile factor in, 324 acute, 3 5 acute hemorrhagic, due to round worm in pancreatic duct 326

Papilla of Viter Treatment of carcinoma of 26

Paralysis and organ transplantation 97

Paralysis, Symptoms of spinal tumors and, of legs due to compression on cord, 94 electrical methods in diagnosis and prognosis of, due to lesions of peripheral



- ment of lymph nodes in carcinoma of 3 gonorrheal structure of 3 8
- Rejuvenation, Resection of the deferent canals for 5 ligation of vas deferens by Stenmach method as means of in old age and other conditions, 38
- Resection, Intracranial injections of adrenalin for, 305
- Retina, Significance of hemorrhages of, 55 bilateral detachment of in septuages of pregnancy 30
- Retropneumothorax cysts 435
- Rhinitis, Injection of alcohol in hyperesthetic, 353
- Ribs Cervical, 244 post typhus fistula of, 4 6
- Röntgen ray Diagnosis of more important tumors of long bones with, 34 new universal exposure table of Fleitler for 31 achylia gastrica as revealed by 35 method of exploring kidney by pneumoperitoneum and, 36 375 treatment of fistulae with 36 technical and clinical aspects of deep therapy with 36 demonstration of intracranial passages by 38 ultraviolet ray and, as physiological complements in therapy, 39 treatment of cancer of lip with 39 study of pathologic gall bladder with 39 effect of heavy radiation with, on pleura and lungs 39 treatment of recurrent inoperable carcinoma of breast with radium and 37, effect of heavy radiation by on pleura and lungs 39 peptic ulcer with deformities of viscera evidenced by 4 scientific basis of short wave length therapy with, 245 statistics and technique of treatment of fibrosarcoma of uterus 215 220 best method of treating terrene fibrosarcoma with 5 treatment of metastatic testicular tumors with, 266 demonstration of nasolachrymal passages with, 266 result and technique of treatment of carcinoma of breast with, 30 determination of intensities of, 359 newer investigations of, dosage 359 comparison measurements between radium and, concerning energy absorbed 1 depth, 360 as energy for cauterization in employment of high voltage therapeutic agent against neoplastic disease 360 cauterization of anal with 385 important points in technique of examination of urinary tract, 384 investigations on functional behavior of stomach in various types of posterior retrocolic gastro-enterostomy as shown by 426 importance of indirect findings in chronic infection of biliary duct and gall bladder 431 pneumoperitoneum as aid in diagnosis of subdiaphragmatic conditions, 435 deep therapy with 437 injuries from deep therapy with 438 carcinoma due to 439 results of treatment of malignant disease with, 459 examination of urinary tract with during excretion of sodium iodide 484, treatment of tumors with, 491 results of therapy in chronic tonsillitis, 49 See also Radiation
- Round ligaments, Restoration of an retroversion of uterus 86
- Round wounds, See Ascaris
- SALIVARY** glands Chronic suppuration of 1 tuberculous of, 1
- Scapula bone Isolated fracture of 437
- Scapula, Crepitation of 236 so-called crepitation of 438
- Scapula, Scapulo palsy and 351 relation of to flatfoot 357 surgical treatment of chronic 439
- Scrofula Operative treatment of 245
- Scrofula, Emphysema of result of diverticulitis of sigmoid with perforation 53
- Semilunar cartilages New approach 245
- Septicæmia, Treatment of postperil by intra osseous administration of mercuriochrome 90 postobstetrical due to hemolytic streptococci 59 bacteriology of fatal following miscarriage or abortion 369
- Serum, Diagnosis of cancer by means of, reactions 36 galvanic excitability of motor nerves following pericentral injection of heterogenous 36
- Shock, Action of ether on circulation in traumatic 289
- Shoulder Sprains of 437 snapping and voluntary dislocation of 435 new arthrodesis of 445
- Shoulder girdle Paralysis of 77 mobilization of entire as aid in thoracoplasty for pulmonary tuberculosis 4 0
- Sigmoid Emphysema of scrotum due to diverticulitis of the perforation, 53
- Singulitis 245
- Sinus, Sinusitis anatomy of superior sagittal 9 infection of sigmoid and lateral 74 total blindness cured by ethmoid operation and opening of sphenoid 7 lateral empyema of frontal 27 sinusitis in pneumo and irrigation of maxillary 358, 400 carcinoma of maxillary 359
- Sinusitis, Outcome of accessory nasal 400 disease of and lung infections, 489
- Skin Homoplastic transplantation of explants of adult frog 17 histologic processes occurring in implanted by Braun method 456
- Skin Polyps of base of 56 surgical operations on gunshot wounds of, during 27 spontaneous occipital pneumothorax of of matted right 75, storm on of fetus during labor 37 fracture of and its complications 409 fracture of base 21b superficial hemorrhage on opposite side 41
- Spina Spina Causa pathology and treatment of 21b 21c
- Spinal cord Analyses of cases of tumor of 30 37 effect of radium on normal tumors of brain and of dogs and its therapeutic application, 39 symptomatology of tumors of and compression paraplegia complete section of dorsal by direct technique results of removal of tumors of 3 mechanical effects of tumors of 79 ocula sarcoma involving brain and 300 fatal congestive hemorrhages in lung and due to anastomotic bodily exertion injury of in breech extraction as important cause of fetal death and paraplegia in childhood 37 fracture of spine with involvement of 445 typhoid spine 21b symptoms of affection of 447
- Spine Röntgenotherapy of intracranial passages following injection of air into 38 diagnosis of traumatic diseases of and modification of ethmoid 30 symptomatology of tumors of and compression paraplegia best bone in stabilizing operations on 30 bone bridging in tuberculosis of 245 operative treatment of curvature of 245 location fracture of cervical 348, place of operations for fixation of in treatment of Pott's disease, 248 osteomyelitis in Pott's disease of 249, operation as part of conservative treatment of Pott's cases of 249 crush fractures of 349 congenital curvature of as intra uterine deformity of right bending, 446 fracture of, with cord involvement, 446 unusual case of typhoid with symptoms of spinal cord affection 447 propping operation on, in spondylitis, 447 arthritis of lumbar 447 See also Vertebra
- Spleen Relationship of surgery to disease of, and its 31 encysted hematomata of 31 surgical treatment of non traumatic affections of 338 sarcoma of, 5 8 spontaneous rupture of, cured by splenectomy 433, ligation of splenic artery in surgery of 433
- Splenectomy Spontaneous rupture of spleen cured by 433, changes in distribution of colloidal carbon in lungs of rabbits following 433
- Spondylitis, Traumatic, 244 rheumatic, 245 propping operation on vertebral column in treatment of 447

- Sperm.** See *Spermatozoa*
- Sterility.** Etiology of, in female 45. Ruben test to assist therapeutic application, 5. diagnosis and relief of 467
- Stillbirths.** Obstetrical problems involved in and death of newborn infants 379
- Stomach.** Reversion of body of for ulcer 8. extirpation of transverse colon with carcinoma 1004. hyper-trophic stenosis of pylorus 8. resection of nerves of 31. surgical treatment of syphils of 81. ulcer of, and duodenums, 81; ulcer of and duodenum, 81. ulcer 81. histology and healing of ulcer of, and duodenum 811. problems and progress of surgery of 81. choice of operation for ulcer of 85. treatment of colloid ulcer of by transcutaneous excision by Krile method, 87. relation of epigastric hernia to ulcer of 85. repeated interventions in carcinoma of 7. spontaneous perforation of, complication of diaphragmatic hernia 7. stenosis of wall of. threat to ulcer of lower curvature 7. ulcer of with deformities of nose evidenced by X rays, 24. ulcer of 224. cancer of 31. new light on peristalsis of 309, pathologic relationship between ulcerin process in, and duodenum and epigastric hernia, 31. distribution of acid cell along dorsal curvature of, and possible relation to ulcer of 3. pylorotomy for ulcer of lower curvature of 3. surgery of ulcers of and duodenums which have perforated into abdominal cavity 3. lymphoblastoma of 3. treatment of simple perforation of ulcer of and duodenum, 3. cancer of 3. ulcerated carcinoma and carcinoma of ulcer of, ulcerated duodenal ulcer 314. diagnosis of chronic ulcer of and duodenum, 3. 5. primary closure of abdominal wall 1. operation on ulcers of with stenosis in operations on and duodenums, 3. 3. surgical treatment of plastron of, 423. problems of ulcer of and duodenum, 4. 3. toxic anastomosis following alkaline treatment of ulcer of, 434. effect of gastro-jejunostomy on function of, interpreted by fractional test meal 400. recent pathological estimations on 1. actual behavior of, in various types of posterior retrocolic gastro-jejunostomy and comparison of its value in ulcer of and duodenum 426. resection of in advanced age 427. relation of disease of gall bladder to secretory function of and pancreas, 43. See also Gastro-intestinal tract and diseases of gastric diseases and operations
- Strabismus.** Correction of by muscle recession with scleral suturing 54. new operative technique for 5. study on 437
- Streptococci.** Postabortal hemolytic 59
- Styloboid ligament.** Importance of ossification of 37
- Synovials.** See *Arthroplasty*
- Sympathectomy.** Cervical, means of tapping plexus of splanchnic plexus, physiological effect of per arterial, 247. technique of per arterial and new technique, 354. per arterial, 448
- Symphyseal joint.** Separation of during labor, 370
- TARSUS.** Isolated disease of scaphoid bone of 327
- Tetis.** Physiological principles in straightening of 309. agreement of medical and dental professions on standardized treatment of focus of infection in, 493
- Temporal bone.** Malignant tumor of 63
- Tendon.** Anatomical processes in regeneration of and in plastic repair of defects of with fascia, cocoonin tissue 60, 444
- Tumor.** See *Fascia femora*, Transplantation of in cases of weakened gluteus medius, 343
- Tonsils.** Right chest cavity 360
- Test.** Ruben, and its therapeutic application, 5. Goetsch's, in diseases of thyroid, 297. Wassermann in pregnancy 360
- Testicle.** Operation of lowering retained in inguinal canal into scrotum, 5. traumatic bilateral dislocation of 265. congenital defect in anterior abdominal wall and non-descent of 265. rupture and treatment by treatment in metastatic tumor of 265. clinical aspect and treatment of undescended, 265. neoplasms 252
- Tetanus.** Bacillus as microbial saprophyte in man, 33. cases of, treated at M. Wachsman's General Hospital 455
- Tetany.** After hemisternectomy 208
- Thoracoplasty.** Graded in chronic pulmonary suppuration, 64. extrapleural in treatment of pulmonary tuberculosis. mobilization of shoulder girdle in and in, 4. 9
- Throat conditions.** in children 20
- Thyrotoxicosis.** Graded in chronic pulmonary suppuration, 64. extrapleural in treatment of pulmonary tuberculosis. mobilization of shoulder girdle in and in, 4. 9
- Thyroid gland.** Goetsch's test and psychotherapy in diseases of 297. surgery of 267. blood supply of and its surgical significance, 265. metastatic tumor from in orbital, 285
- Thyroidectomy.** New technique for 20. tetany after 208
- Thyroidectomy.** Technique of 205
- Thyroid.** Dissection procedure in case of ossification of tuberosity of 91. etiology of Schlietter disease 17. injuries to cervical lymphatics and value of aspirate of 220, hereditary symmetrical extension of, 44
- Tongue.** Carcinoma of and its treatment with radium, 261. in diagnosis and treatment of cancer of 20. carcinoma of, treated by esophageal glass, 261. carcinoma of, treated by esophageal glass, 261. general principles and 1. operations for carcinoma of, 4. 3. 4. 4
- Totol.** Total infection in chronic tuberculous ophthalmia, 300. X-ray treatment of 49
- Trauma.** See *Complications* 492
- Tumors.** Results of roentgen therapy in chronic, 492
- Tumors.** 1. explanation of etiology of intracranial epistaxis, 468
- Torticollis.** Origin and Treatment of congenital muscular 91
- Trachea.** Resection of and plastic operation on 3. congenital stenosis of trachea with fistula into 300
- Tracheotomy.** Complicated by effusion of blood 65
- Transfusion.** Alterations blood after 8 in postoperative shock anemia 454. intraperitoneal, of citrated blood 454
- Tuberculosis.** Pregnancy and 20, association of different malignant tumors and in same organ, 468. See also names of organs and parts
- Tumors.** Observations on cystic xanthomas, and grossness of xanthomas in general, 60. action of burned tubes of radium emanation on, in placenta, 36. surgery of abdomen 435. See also names of organs and parts
- Twining.** Cause of tubal pregnancy and tubal, 471
- ULCEER.** Observations on origin, causation, and treatment of peptic 5. See also names of organs
- Ulna.** Resection of distal end of, for shortening of plexus following fracture 343
- Ulna.** See *Ulna* and *Ulna* as physiological complementum in therapy 40
- Umbilical cord.** Intra uterine rupture of telomeres 190, explanation of axial torsion of external organs and twisting, constricting and knotting of 468
- Umbilical.** Diseases of 7

Urter Pathological complications with duplication of renal pelvis and, 47 stricture in catheterization of, 49 structure of an important etiological factor is so-called essential hematuria, 94 diagnosis of small concretions in renal pelvis and, 94 double kidney and double, 96 supernumerary with extra renal opening, 96 extreme dilatation of 263 cystic enlargement of vascular extremity of right, and its treatment 263 primary tumors of 264 anuria due to calculi in 267 operative treatment of cystic dilatation of, caecal end of, 473, accidental bilateral occlusion of, 478, limits of 479 conservative renal surgery associated with treatment of structure of, 479 acquired structure of male 480 *See also* under Urinary Tract

Ureteropyelogram, New method of making, 474

Urethra, Primary carcinoma of female, treated with radium, 45 gunshot injuries of, and their treatment 5 prolapse of female, and eversion of external orifice of 8 renal colic associated with conditions of in women, 376 associated closed traumatic rupture of posterior and bladder 380 unusual case of traumatic structure of 483 *See also* under Urinary Tract

Urinary tract, Irritations in sacral anesthesia in operations on, 63 relation of calcified abdominal glands to surgery of, 268 *see also* aspects of surgery of, 384, important points in technique of roentgenological examinations of, 384, cystoscopic appearances in tuberculosis of, 470 salivagina in treatment of infections of lower 48 roentgenography of during excretion of sodium iodide 484 mechanism of formation of calculi in, 484 485 *See also* under of parts diseases, and operations

Urine Test for sugar in, in pregnancy 366 distaste blood and, as measure of renal efficiency 374

Urotoposin, Action of, 374

Uterus, Prolapse of with pelvic relaxation, 43 relation of hypertension to fibroid disease of 4 indications for total ablation in certain cases of rupture of 4, significance of aneurysm of vessels of as indicated by arteriovenous aneurysm of artery and its due to arterial bomb injury 4 irradiation versus excision of fibromata of, 4 adenocarcinoma of fundus of 4 end results of surgical treatment of carcinoma of cervix of, 4 intermittent asphyxial hypoxemia in infection of cervix of 44 results of treatment of carcinoma of cervix of 4 cancer in stump of cervix of, forming metastases in endometrial appendix 6 myoma of and accident, 6 retroversion of following delivery, 30 after cesarean section, 30 action of ergot and solution of hypophyses on 50 radical operation for vaginal and leucoid hernia with plastic sac at through abdominal cavity and simultaneous laparotomy for another condition 7 use of sutures as tractors in vaginal operation for prolapse of 86 pre cancerous conditions of cervix of 86 restoration of round ligaments in retroversion of, 86 surgical treatment of puerperal gas bacillus infection of, 9 statistics and technique of treatment of fibromyoma of, by radiotherapy 50 improved method of supporting bladder and apex after vaginal hysterectomy for prolapse of, 50 best method for treatment of fibromyomata of, by means of roentgen rays, 5 cancer of, 5 fistula involving bladder vagina, and,

53 treatment of cancer of with moderate irradiation 55 statistics of carcinoma of 55 macroscopic as compared with clinical diagnosis of malignant neoplasms of 563 pathology of bleeding of 563 treatment of ystocoele rectocoele and prolapse of 564 cesarean section for delivery of pregnant half of double 370 effect of retention of on coagulation of blood 46 alien as vessels of ventrofixation of 46 radium in treatment of hemorrhage of of non malignant type, 463 chronic inflammation of cervix of and its treatment 466 diagnosis of cancer of 466 radium treatment of cancer of cervix of 466 vaccination of different malignant tumors of tubal loop in 468 fibromyomata of complicating pregnancy 470 chemical cesarean section under local anesthesia with temporary fracture of 473 acute complete inversion of 47

Uteral pigment Therapeutic use of in sympathetic ophthalmia 200 diagnostic and therapeutic use of in injuries of cervical tract 260

VAGINA New method for surgical treatment of anus opening into 44 formation of artificial 44 53 improved method of supporting bladder and after vaginal hysterectomy for proctocolitis 50 fistula involving uterus bladder and 5 treatment of cancer of with moderate irradiation 55 posterior drainage through the description of new instrument used as pelvic guide 364

Vaginal epiglottitis, Carcinoma of

Vas deferens Local and general effects of resection of 5 ligation of by Stenach method as means of sterilization 38

Vena Significance of aneurysm of terine vessels as indicated by anastomosis of uterine artery and duct arterial bomb injury 4 fistula of femoral artery, and on level with origin of profunda, 35 bacterial control of blood of portal and origin of liver shunters 430 aneurysm of subclavian artery and with reversal of circulation of arm 455

Venae Fibrosis of lung following ligation of pulmonary artery combined with phlebotomy and partial occlusion of pulmonary 304 accumulation in peritonsillar cavity of mass injected into 357

Ventriculography and intraventricular photography in internal hydrocephalus 4

Vertebra Backward luxation of seventh cervical with isolated compression of nerve roots 37 lateral subluxation of third cervical, on fourth, 347

Vertebrae Diagnosis of traumatic diseases of spinal column and insufficiency of 60 puncture of abscess anterior to 244 treatment of painful affections involving cervical 347 *See also* Spine

Vision 7 injuries of tract of brain, 3

Vul Bilateral resection of pudendal nerves for priapism of 467

WASSERMANN'S reaction in pregnancy 366

Wound, Best of damages for alleged leaving of gauze in 85

Wounds Physiology of 407

Wrist Rare injuries of 38 dislocation of sesamoid carpal bone of 34 sprains of 437



# INDEX TO BIBLIOGRAPHY

## GENERAL SURGERY

### *Surgical Techniques*

- Operative Surgery and Technique, 58, 3 30 273 30, 495
- Aseptic and Antiseptic Surgery, 58, 273 30 495
- Anesthesia, 58, 31 30 273 30 495
- Surgical Instruments and Apparatus, 58, 3 273, 30 495

### *Surgery of the Head and Neck*

- Head, 58, 3 303, 73, 301, 495
- Neck, 30, 32 303, 574, 302 497

### *Surgery of the Chest*

- Chest Wall and Breast, 30, 32, 303, 274, 303, 497
- Trachea and Lungs, 60, 3 303, 275, 303, 497
- Heart and Vascular System, 60, 3 303 75, 303, 498
- Pharynx and Esophagus, 60, 32, 304 275 303, 498
- Miscellaneous, 32, 275, 303, 498

### *Surgery of the Abdomen*

- Abdominal Wall and Peritoneum, 60 33, 304, 275 304 498
- Gastro-Intestinal Tract, 60, 33, 304 276, 304 499
- Liver Gall Bladder Pancreas and Spleen, 62 34, 306, 78, 306, 500
- Miscellaneous, 62, 135, 306 278, 306 50

### *Surgery of the Extremities*

- Conditions of the Bones, Joints, Muscles, Tendons, Etc, 63, 35, 307 79, 307 50
- Fractures and Dislocations, 63 36, 307 279 307, 503
- Surgery of the Bones, Joints, Muscles, Tendons, Etc, 64, 36, 308, 330, 305, 504
- Orthopedics in General, 36 308, 505

### *Surgery of the Spinal Column and Cord*

- Diseases and Deformities of the Spine and Cord, 64 36, 308, 330, 305, 505

### *Surgery of the Nervous System*

- Diseases and Surgery of the Nerves, 64 37 309 38 309, 506

### *Miscellaneous*

- Chemical Entities—General Physiological Conditions, 65, 37 309 38 309 506
- Scars, Vaccines, and Ferments, 65, 37 38 309, 507

- Blood, 65, 37 309, 282, 309, 507
- Blood and Lymph Vessels, 65 38, 3 400 507
- General Bacterial Infections, 400, 508
- Surgical Dermoses, Pathology and Therapeutics, 65, 38 0, 3 400 508
- Experimental Surgery and Surgical Anatomy, 65, 38 400 508
- Radiology and Radium Therapy, 65 38 0, 282, 400 508
- Industrial Surgery, 66 39 508
- Hospitals, Medical Education and History, 66, 40 283 401 508
- Legal Medicine, 67 40 283 40 500

## GYNECOLOGY

- Uterus, 67 40, 283 40 500
- Adrenal and Peri Uterine Conditions, 67 40 283 40 500
- External Genitalia, 67 40 283 402 500
- Miscellaneous, 67 142 284, 402 5

## OBSTETRICS

- Pregnancy and Its Complications, 68 74 284 402, 510
- Labor and Its Complications, 68, 4 284, 402, 5
- Puerperium and Its Complications, 68, 14 2, 284, 402 51
- Newborn, 68, 14 3 85, 402, 5
- Miscellaneous, 68 141 3 403 5

## GENITO URINARY SURGERY

- Adrenal Gland and Ureter, 69, 4 2, 285 403 5
- Bladder, Urethra and Penis, 69 14 4, 285, 404 5
- Genital Organs, 69, 14 4 286, 404, 5
- Miscellaneous, 70 142, 4, 287 404, 5 5

## SURGERY OF THE EYE AND EAR

- Eye, 70 143 5 287 405, 5 5
- Ear, 7 43 5 287 405, 514

## SURGERY OF THE NOSE, THROAT AND MOUTH

- Nose, 71 144, 6, 288, 405 514
- Throat, 71 144, 16, 288, 406 514
- Mouth, 72, 144, 6, 288, 406, 5 5





# INDEX TO AUTHORS

- Abade 8  
Abell, J 43  
Abrahamson H 330  
Adams W H 34  
Adke, W R 43  
Adson A W 3  
Aevoli, 7  
Alberti, O 47  
Albertus, 45  
Allen, D S 5  
Allport, F 457  
Alvarez, W C 73, 309  
Appertly F L 309  
Archibald, F W 307  
Ary L B 47  
Aynard 8  
Aycock, C G 4  
Ackerly F W 264  
Aikley, A D 443  
Ainsicht, G 4  
Aizawa, G 76, 44  
  
Babcock J W 40  
Bacon, C S 37  
Bacon, D K 42  
Baudbridge W S 79  
Baker C F 75  
Bakker C, 439  
Ballou, G V  
Baldery F C 47  
Ball, W G 476  
Banting, F C 356  
Barney J D 26 383 476  
479, 483  
Barne G 9  
Barninger B S 3  
Bauer J H 53  
Beck, A C 57  
Beck, O 15  
Beckers, M 5  
Beckle, A C 8  
Behrendt, 74  
Bell, W B 7  
Benedict, F G 4 4  
Berry G 40  
Bottman, R B 3 5  
Beorch, R 45  
Bercher E 44  
Bird, F D 44  
Bjale, D 57  
Blackman, J F 60  
Black ell, H B 328  
Blackwell, K S 389  
Blahd, M E 400  
Blake, E M 20  
Blanchard, 76  
Bloodgood J C 5, 80 330,  
332, 335, 436  
Blum 364  
Blum, D M 3 5  
Blum, P, 07  
Bochner, L 74  
Boomsma, A 01  
  
Bolin H 43  
Bolan, R 76  
Bonnet, 37  
Booney, 6 463  
Bottomley, J T 320  
Boutman, H A 31 34  
Bourgeois, G 80  
Bowen H H 266  
Boyd E 49  
Boyd, G L 4 5  
Boyd, W 3 0  
Brasch, W I 47 49 375  
Breadbarn, M 34  
Bradford, I H 34  
Brath L 329  
Braslet, W 1  
Braun W K 04  
Brundt, O 97  
Bretschneider 6  
Brewer G E 4  
Brown, G O 47  
Brown, L T 01  
Brown, K P 135  
Brown, T A 69  
Brown, T H 260  
Bruce H A 375  
Brossmer I 247  
Brout, H 9  
Brown S A, 99  
Bryan W A 353  
Bull, P  
Bullock, H A 53  
Bullock F D 35  
Bunpus H C 93  
Buntis F I 3  
Burdick, J I 05  
Burdick A L 35  
Burket W C 7  
Burns C F 4  
Burnham M P 432  
Burns, J W 465  
Butler T H 55  
  
Cahen, J 77  
Callander C L 449  
Calot, F 35  
Calh4, J 349  
Calavara D 454  
Camera U 44 580  
Campbell W C 24 130  
Campbell, W R 356  
Cannabati, M 439 44  
Cannik, J 06  
Capper, J A 24  
Carones, A M 20  
Carshaw, J 328  
Carter J M 269  
Carter, R F 30  
Case, J T 36  
Cattell, M 289  
Cavoco, A 435  
Caylor, H D 266  
Cecil A B 3  
  
Chamberlain W B 486  
Charles J W 27  
Chave H C 34  
Chavrus I 34  
Chen W S 5  
Chetwood C H 466  
Charr O M 06 245  
Christopher F 418  
Chrysanfa M 320  
Churchman J W 356  
Caccia S 440  
Cannon O 7  
Cimmaria, A 94  
Clail, A J 456  
Clark, J G 55  
Clot H M 0  
Colfeld, R B 245  
Cohen H 5  
Coleman G H 24  
Collins, H 15  
Collins A W 435  
Collins, C U 69  
Collins, I K 3  
Colum, J A C 483  
Cone S M 213  
Cone H R 83  
Cook, A O, 326  
Corden, F C 34  
Cortery, J R 53  
Corral, L  
Cormack 244  
Coronado, J A 70  
Cossacru A 07  
Cotte, G 369  
Cotton F J 244  
Coyte, R 70  
Cribbree, E O 260  
Crane, A W 35  
Cravford R H 47  
Crawshaw J L 45  
Crile D W 203  
Crile, G W 85, 4 4  
Cromarty R F 221  
Crothers B 37  
Cullen, T S 7 76  
Cummings R E 427  
Curtis A H 467  
Curtis, M R 35  
Cutler E C 30 3  
Carrer L 4 8  
  
DaFano, C 200  
Dahl Iversen, E 3 4  
Dahlstrom, S 63  
Dabnane H 415, 490  
Dyland, I M 219, 36  
D'Almeida, G 24  
Dalziel K 126  
Dandy W E 9  
Darling, B C 493  
Darnall, W E  
Davidson, H J 470  
Davies, H M 304  
  
Davis, E P 20  
Davis, C G 151  
Davis, L A 5  
Davis L I 4  
Davis W H 7  
Dean W 5  
DeBerna Lazard R 94  
DeBryne I 7  
DeGastano L 83  
DeLannoy I 18  
Deicher H A 260  
Delbert 36  
Delore X 7  
Deaver B S 7  
De Ott, D 6  
Deutschlander 443  
Deike J K M 64  
Dieckmann, W J 369  
Donk, A 43  
Dorland, W A 43 7  
Doob H P 269  
Dremsa, J O 89  
Dremsa, E 90  
Droner L 6  
Dubachne I I 80  
Dyane W 248  
Dubouchet H 34  
Duba, J 65  
Druff, D 239  
Dunst C 2  
Dunham, E 2  
Dunham, K 289  
Dunning H S 293  
  
Eastman J R 330  
Elberg E  
Edington, G H 538  
Elmwood 5  
Eggers C 4 6  
Eggers, H 9  
Einhorn, M 24 429  
Eisenrath, D N 267 376  
281  
Eitner E, 7  
Elshorn, G 378  
Elbertson, N 309  
Elinger, 74  
Elliot R H 386  
Elsburg, C A 79  
Epstein, G 446  
Epstein, G I 20  
Emery I F S 71  
Emery J F S 41 488  
Eustis, R S 20  
  
Faiba, G 360  
Fander W A 74  
F T 4  
Fedempeel, M N 9  
Feiber, E 265  
Felix W 378  
Feller, Q 37  
Flop F A 492



- Mayhew J M 48  
 Mayo C H 33  
 Mayne W J 354  
 Maier C 5  
 McArthur L L 28  
 McCabe F J 7  
 McClure C W 34  
 McClure W B 7  
 McDonald G 45  
 McDonald A L 37  
 McFadden P F 36  
 McGrath A B 4  
 McGee E R 02  
 McIver M A 320  
 McKinnon L S 3  
 McMaster P D 324  
 McVay F P 369  
 Meloy J R 3  
 M Williams C A 201 34  
 Mebane T B 344  
 Meeker W R 7  
 Meigs J V 42 53  
 Melchor E 73 407  
 Melson O C 466  
 Merrill W J 96  
 Meyer J 08  
 Meyer M 490  
 Meyer W 14 30  
 Michon L 09  
 Miller E M 03  
 Miller R H 453  
 Mills H W 80  
 Mills R W 430  
 Milward F W 45  
 Minto 444  
 Mitchell A P 95  
 Mittell E A 4  
 Minter W J 446  
 Moffat B W 337  
 Mogartski W 41  
 Monaco A 08  
 Mondor H 213  
 Moody W B 369  
 Moore E 306  
 Moore B H 240  
 Moore F D 24  
 Moppert O O 7  
 More Kahn 56  
 Morrison R 75  
 Morley J 3  
 Morrell S D 07  
 Morton C A 4 7  
 Morton R 457  
 Moschowitz A 3  
 Moylan B 4 3  
 Moeder A 420  
 Mueller A 376  
 Mueller W 234 455  
 Mueller H R 374  
 Menger A D 482  
 Menro D 30  
 Murphy D P 89  
 Murphy J B 8  
 Murrey R D 470  
 Murgelbach 45  
 Mutton L N 470  
 Murren H 200  
 Necker F 278  
 New G B 65 4 3  
 Nichols R H 34 384  
 Nicolayson N A 454  
 Noordboon W 3  
 Norris C C 69 363  
 Norrie 306  
 Nyulasy A J 84  
 Ochener A J  
 O Connor J 83  
 Ochlecker F 26  
 Olunde W 66  
 Oliver J C 8  
 Oliver S F 3  
 Oliver I 355  
 Openaba I H 244  
 Orell S 77  
 Ormos P 33  
 Osborne E B 434  
 Ostermeier K 410  
 Ott W O 3 304  
 Ottenberg R 50  
 Oudard G 3 7  
 Oudensal A J F 450  
 Pariter C F 240  
 Palagay J 436  
 Park E A 436  
 Parker W B 380  
 Parisch 76  
 Paschell C 369  
 Paterson H J 37  
 Patton J M 54  
 Paul 45  
 Pendergast E P 30  
 Pennington J R 74  
 Pernan E 44  
 Peron G 26  
 Peterson E W 87  
 Pfahler O E  
 Pfanner W 257  
 Pfanner 267  
 Pfender D B 413  
 Philer C H 316  
 Pichler H 79  
 Pickard R 457  
 Pickett A N 9  
 Piper E B 90  
 Plath V  
 Plowin L 340  
 Pokal J O 4  
 Polensoff A L  
 Pomeroy L A 45  
 Poppens P H 90  
 Prinsmore A 3  
 Probstner A 43  
 Prudent H J  
 Pryor J H 306  
 Putsch L 415  
 Quinn F P 3 4 428  
 Quinby W C 375  
 Quinlan W S 3  
 Radack H E 3  
 Rahn H 426  
 Rambo V C 30  
 Rankin F W 13  
 Ransohoff J L 434  
 Ratnakar R P 270  
 Rectena K J J 409  
 Rehman M I 470  
 Rehn E 370  
 Reichle 171  
 Reichle R 3  
 Reid M R 42  
 Rettler E 3  
 Reverchon L 73  
 Reus P 3 4  
 Rewter F A 33  
 Rhodes R L 93  
 Ruckelshaus A 76  
 Richards T 47  
 Richter J 230 263  
 Rieder W 37  
 Rigby H M 326  
 Ringer P H 304  
 Rivers A B 424  
 Roberts J B 305  
 Roberts P W 243  
 Roeder C A 20  
 Roepke W 3  
 Roettger P 379  
 Rogers M H 93  
 Rosenthal 53  
 Rosenzweig 53  
 Ross F 74  
 Roth P B 27  
 Rothbart L 56  
 Rowan 76  
 Rowell H G 407  
 Rowley W N 306  
 Rowntree L O 434  
 Rucker M P 80  
 Rud H  
 Rudolph A 4 3  
 Rutenberg B 47  
 Ryerson E W 326  
 Sachs F 205  
 Sachs B 64  
 Sachs E 1  
 Sadler J E 4 7  
 Sampson C M 30  
 Sampson J A 41 86  
 Sand K 18  
 Sauer P D 28  
 Sausby J M 455  
 Sauter L R 455  
 Satta F 438  
 Saxil A 36  
 Sayad W 4  
 Schaefer F 244  
 Schaefer H 53 54  
 Schatz H R 383  
 Schlaepfer K 4 304  
 Schlegel A 28  
 Schmittler I 490  
 Schmidt E R 3  
 Schmitt H 399  
 Schochet S S 243  
 Scholl A J J 47 49 65  
 Schroeder G F 24  
 Scholz O L 445 446  
 Schwartz A H 196  
 Schwart G 444  
 Schwarz O 364  
 Scudder C L 83  
 Seare N P 474  
 Segall H N 8  
 Seilhorn H 464  
 Sencott L 07  
 Seeg M I 38  
 Serra G 68  
 Shaw W F 43  
 She Maclean J A 09  
 Shedden W M 383 45  
 Sheldon J G 266  
 Shoemaker J A 370  
 Shoemaker W T 90  
 Silbert S 76 81  
 Sillick W M 433  
 Simmons C C 0  
 Simpson F P 204  
 Sipsstein D M 424  
 Sittenfeld M J 67  
 Skolem J H 450  
 Small W B 456  
 Smekens E 77  
 Smith H 3  
 Smith A L 48  
 Smith D 3-6  
 Smith J A 5  
 Smith R R 8  
 Smith R 88  
 Smith S M 484  
 Smith F 360  
 Solomon B 9  
 Sommer R 490  
 Sorensen C T 9  
 Soutter H S 7  
 Spiller W G 30 77  
 Stahl O 247  
 Stanley L L 18  
 Stanton E M 376  
 Starr H H 355  
 Starr F N G 3 3  
 Stern O J 383  
 Steninger A 34  
 Steiner O  
 Stengler H 87  
 Sternroos K W 360  
 Stern W G 326  
 Stevens J H 38  
 Stevens W E 374 478  
 Stewart I G  
 Stewart M J 325  
 Stinson C M  
 Stookey B 79  
 Stopford J S B 8  
 Strickland L 96  
 Strobel C W 300  
 Sturm I 8  
 Sutherland C C 444  
 Sutton G E 64  
 Sutton M G 374  
 Symborski L 36  
 Symonds C 3 4  
 Tardacron 297  
 Tarnag L  
 Tarnag L R 204  
 Taylor F B 73  
 Taylor W J 450  
 Tefau J H 370  
 Ten Broeck C 33  
 Tenckhoff B 407 46  
 Tenenbaum J L 197  
 Tenenbaum C F 485



